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\* \* \* \* \* Welcome to STN International \* \* \* \* \*

NEWS	1		Web Page for STN Seminar Schedule - N. America
NEWS	2	JUL 28	CA/CAPplus patent coverage enhanced
NEWS	3	JUL 28	EPFULL enhanced with additional legal status information from the epline Register
NEWS	4	JUL 28	IFICDB, IFIPAT, and IFIUDB reloaded with enhancements
NEWS	5	JUL 28	STN Viewer performance improved
NEWS	6	AUG 01	INPADOCDB and INPAFAMDB coverage enhanced
NEWS	7	AUG 13	CA/CAPplus enhanced with printed Chemical Abstracts page images from 1967-1998
NEWS	8	AUG 15	CAOLD to be discontinued on December 31, 2008
NEWS	9	AUG 15	CAPplus currency for Korean patents enhanced
NEWS	10	AUG 27	CAS definition of basic patents expanded to ensure comprehensive access to substance and sequence information
NEWS	11	SEP 18	Support for STN Express, Versions 6.01 and earlier, to be discontinued
NEWS	12	SEP 25	CA/CAPplus current-awareness alert options enhanced to accommodate supplemental CAS indexing of exemplified prophetic substances
NEWS	13	SEP 26	WPIDS, WPINDEX, and WPIX coverage of Chinese and Korean patents enhanced
NEWS	14	SEP 29	IFICLS enhanced with new super search field
NEWS	15	SEP 29	EMBASE and EMBAL enhanced with new search and display fields
NEWS	16	SEP 30	CAS patent coverage enhanced to include exemplified prophetic substances identified in new Japanese-language patents
NEWS	17	OCT 07	EPFULL enhanced with full implementation of EPC2000
NEWS	18	OCT 07	Multiple databases enhanced for more flexible patent number searching
NEWS	19	OCT 22	Current-awareness alert (SDI) setup and editing enhanced
NEWS	20	OCT 22	WPIDS, WPINDEX, and WPIX enhanced with Canadian PCT Applications
NEWS	21	OCT 24	CHEMLIST enhanced with intermediate list of pre-registered REACH substances
NEWS EXPRESS	JUNE 27 08		CURRENT WINDOWS VERSION IS V8.3, AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS LOGIN			Welcome Banner and News Items
NEWS IPC8			For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 13:25:17 ON 29 OCT 2008

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=> file reg
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                              ENTRY      SESSION
FULL ESTIMATED COST          0.21        0.21
```

FILE 'REGISTRY' ENTERED AT 13:25:32 ON 29 OCT 2008  
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STRUCTURE FILE UPDATES: 28 OCT 2008 HIGHEST RN 1067631-14-4  
DICTIONARY FILE UPDATES: 28 OCT 2008 HIGHEST RN 1067631-14-4

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TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

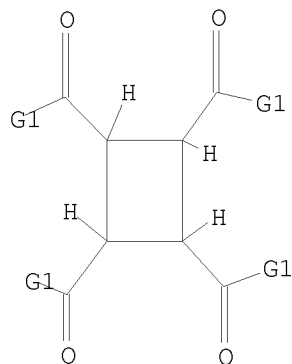
REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

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=>
Uploading C:\Program Files\Stnexp\Queries\10511564-butane.str
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L1 STRUCTURE UPLOADED

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=> d l1
L1 HAS NO ANSWERS
L1 STR
```



G1 O,N

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 13:25:49 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 2270 TO ITERATE

88.1% PROCESSED 2000 ITERATIONS 25 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 42542 TO 48258  
PROJECTED ANSWERS: 248 TO 886

L2 25 SEA SSS SAM L1

=> s l1 full

FULL SEARCH INITIATED 13:25:53 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 45773 TO ITERATE

100.0% PROCESSED 45773 ITERATIONS 468 ANSWERS  
SEARCH TIME: 00.00.01

L3 468 SEA SSS FUL L1

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	178.36	178.57

FILE 'CAPLUS' ENTERED AT 13:26:05 ON 29 OCT 2008  
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FILE COVERS 1907 - 29 Oct 2008 VOL 149 ISS 18  
FILE LAST UPDATED: 28 Oct 2008 (20081028/ED)

Caplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/legal/infopolicy.html>

=> s l3

L4 153 L3

=> d l4 ibib abs hitsrt 1-  
'HITSRT' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB  
ALL ----- BIB, AB, IND, RE  
APPS ----- AI, PRAI  
BIB ----- AN, plus Bibliographic Data and PI table (default)  
CAN ----- List of CA abstract numbers without answer numbers  
CBIB ----- AN, plus Compressed Bibliographic Data  
CLASS ----- IPC, NCL, ECLA, FTERM  
DALL ----- ALL, delimited (end of each field identified)  
DMAX ----- MAX, delimited for post-processing  
FAM ----- AN, PI and PRAI in table, plus Patent Family data  
FBIB ----- AN, BIB, plus Patent FAM  
IND ----- Indexing data  
IPC ----- International Patent Classifications  
MAX ----- ALL, plus Patent FAM, RE  
PATS ----- PI, SO  
SAM ----- CC, SX, TI, ST, IT  
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;  
                  SCAN must be entered on the same line as the DISPLAY,  
                  e.g., D SCAN or DISPLAY SCAN)  
STD ----- BIB, CLASS  
  
IABS ----- ABS, indented with text labels  
IALL ----- ALL, indented with text labels  
IBIB ----- BIB, indented with text labels  
IMAX ----- MAX, indented with text labels  
ISTD ----- STD, indented with text labels  
  
OBIB ----- AN, plus Bibliographic Data (original)  
OIBIB ----- OBIB, indented with text labels  
  
SBIB ----- BIB, no citations  
SIBIB ----- IBIB, no citations  
  
HIT ----- Fields containing hit terms  
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
                  containing hit terms  
HITRN ----- HIT RN and its text modification  
HITSTR ----- HIT RN, its text modification, its CA index name, and  
                  its structure diagram  
HITSEQ ----- HIT RN, its text modification, its CA index name, its  
                  structure diagram, plus NTE and SEQ fields  
FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
                  its structure diagram  
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
                  structure diagram, plus NTE and SEQ fields  
KWIC ----- Hit term plus 20 words on either side  
OCC ----- Number of occurrence of hit term and field in which it occurs

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ENTER DISPLAY FORMAT (BIB):end

=> d l4 ibib abs hitsrt 1-  
'HITSRT' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

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ALL ----- BIB, AB, IND, RE  
APPS ----- AI, PRAI  
BIB ----- AN, plus Bibliographic Data and PI table (default)  
CAN ----- List of CA abstract numbers without answer numbers  
CBIB ----- AN, plus Compressed Bibliographic Data  
CLASS ----- IPC, NCL, ECLA, FTERM  
DALL ----- ALL, delimited (end of each field identified)  
DMAX ----- MAX, delimited for post-processing  
FAM ----- AN, PI and PRAI in table, plus Patent Family data  
FBIB ----- AN, BIB, plus Patent FAM  
IND ----- Indexing data  
IPC ----- International Patent Classifications  
MAX ----- ALL, plus Patent FAM, RE  
PATS ----- PI, SO  
SAM ----- CC, SX, TI, ST, IT  
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;  
                  SCAN must be entered on the same line as the DISPLAY,  
                  e.g., D SCAN or DISPLAY SCAN)  
STD ----- BIB, CLASS  
  
IABS ----- ABS, indented with text labels  
IALL ----- ALL, indented with text labels  
IBIB ----- BIB, indented with text labels  
IMAX ----- MAX, indented with text labels  
ISTD ----- STD, indented with text labels  
  
OBIB ----- AN, plus Bibliographic Data (original)  
OIBIB ----- OBIB, indented with text labels  
  
SBIB ----- BIB, no citations  
SIBIB ----- IBIB, no citations  
  
HIT ----- Fields containing hit terms  
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
                  containing hit terms  
HITRN ----- HIT RN and its text modification  
HITSTR ----- HIT RN, its text modification, its CA index name, and  
                  its structure diagram  
HITSEQ ----- HIT RN, its text modification, its CA index name, its  
                  structure diagram, plus NTE and SEQ fields  
FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
                  its structure diagram  
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
                  structure diagram, plus NTE and SEQ fields  
KWIC ----- Hit term plus 20 words on either side  
OCC ----- Number of occurrence of hit term and field in which it occurs

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All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR,

FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC  
to view a specified Accession Number.  
ENTER DISPLAY FORMAT (BIB):end

=> d l4 ibib abs hitstr 1-  
YOU HAVE REQUESTED DATA FROM 153 ANSWERS - CONTINUE? Y/(N):y

L4 ANSWER 1 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2008:1205912 CAPLUS  
TITLE: Preparation of peptide prodrugs modified with a  
1,2,3,4-cyclobutanetetracarboxylic acid derived moiety  
useful in treatment and diagnosis of tumors and  
inflammatory diseases  
INVENTOR(S): Matthieu, Michel; Dubois, Vincent; Tranchant,  
Isabelle; Kearsey, Jonathan  
PATENT ASSIGNEE(S): Diatos, Fr.  
SOURCE: Eur. Pat. Appl., 31pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1977765	A1	20081008	EP 2007-300920	20070403
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
WO 2008120098	A2	20081009	WO 2008-IB808	20080403
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRIORITY APPLN. INFO.:			EP 2007-300920	A 20070403
			US 2007-989486P	P 20071121

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention is related to the preparation of peptide prodrugs I [L1, L2 = independently a covalent bond or a linking moiety; X = (CH<sub>2</sub>)<sub>n</sub>; X' = (CH<sub>2</sub>)<sub>m</sub>; X'' = (CH<sub>2</sub>)<sub>p</sub>; X''' = (CH<sub>2</sub>)<sub>q</sub>; n, m, p, q = independently 0-10; Y = cleavable oligopeptide moiety; D = therapeutic agent or marker] which improve the therapeutic index and the solubility of the therapeutic agent and are intended for the treatment and/or diagnosis of tumors and/or inflammatory reactions. Thus, tetraAcid-ALAL-doxorubicin II was prepared and showed stability in human plasma after 2 h incubation. II was evaluated for its in vivo efficacy in the LS 174T tumor model.

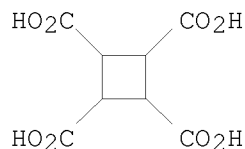
IT INDEXING IN PROGRESS

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of peptide prodrugs modified with a  
1,2,3,4-cyclobutanetetracarboxylic acid derived moiety)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:920898 CAPLUS

DOCUMENT NUMBER: 149:298197

TITLE: Uranyl-Organic Frameworks with  
1,2,3,4-Butanetetracarboxylate and  
1,2,3,4-Cyclobutanetetracarboxylate Ligands

AUTHOR(S): Thuery, Pierre; Masci, Bernardo

CORPORATE SOURCE: DSM/IRAMIS/SCM (CNRS URA 331), CEA/Saclay,  
Gif-sur-Yvette, 91191, Fr.

SOURCE: Crystal Growth & Design (2008), 8(9), 3430-3436  
CODEN: CGDEFU; ISSN: 1528-7483

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The reaction of uranyl nitrate with 1,2,3,4-butanetetracarboxylic acid (H4BTC) and 1,2,3,4-cyclobutanetetracarboxylic acid (H4CBTC) under hydrothermal conditions gives various two- and three-dimensional frameworks. [(UO2)2(BTC)(H2O)4]·4H2O (1) is a (4,4) grid in which the BTC4- ligands act as rectangular nodes and the uranyl ions as divergent, side-defining nodes. [(UO2)2(CBTC)(H2O)2]·2H2O (2) and [(UO2)2(CBTC)(H2O)2]·H2O (3), with the ligand in the cis,trans,cis form, present two types of three-dimensional architectures, with narrow channels formed in complex 2 only. In complex 4, [H3O]2[(UO2)5(CBTC)3(H2O)6], the ligand is in the noncentrosym. trans,trans,trans form, which assumes a saddle shape. This peculiar geometry of the ligand gave two types of subunits: 4:4 (metal/ligand) metallacycles and 8:12 cubic boxes, which are connected to one another to form a cubic lattice containing large channels. This latter result shows that the same geometric considerations which have permitted the synthesis of uranyl-based mol. metallamacrocycles and boxes can be used for the design of porous three-dimensional frameworks based on analogous motifs.

IT 38841-00-8, cis,trans,cis-1,2,3,4-Cyclobutanetetracarboxylic acid

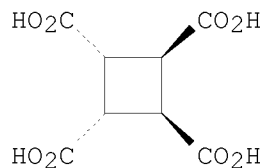
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of uranyl butanetetracarboxylate and  
cyclobutanetetracarboxylate framework coordination polymers)

RN 38841-00-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

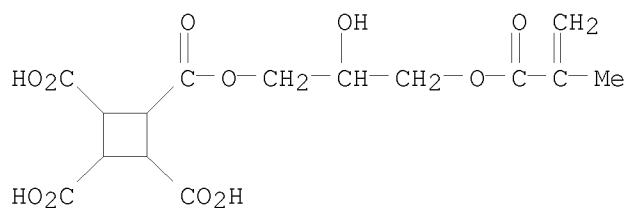
Relative stereochemistry.



REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

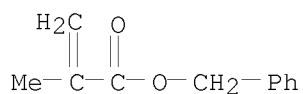
L4 ANSWER 3 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2008:830842 CAPLUS  
DOCUMENT NUMBER: 149:164290  
TITLE: Curable composition, color filter, and manufacturing  
method of the same  
INVENTOR(S): Nakashima, Taeko; Shimada, Kazuto  
PATENT ASSIGNEE(S): Fujifilm Corporation, Japan  
SOURCE: PCT Int. Appl., 161pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008081988	A1	20080710	WO 2007-JP75402	20071227
W:	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
JP 2008165059	A	20080717	JP 2006-356376	20061228
PRIORITY APPLN. INFO.:			JP 2006-356376	A 20061228
AB	A curable composition including (A) a compound which has a plurality of ethylenically unsatd. double bonds and secondary hydroxyl groups, (B) a photopolymn. initiator, and (C) a coloring agent, is used to provide a curable composition which exhibits excellent storage stability such as dispersion stability even in the case where a coloring agent is included at high concentration, highly sensitive curability by exposure, high adhesiveness to the surface of a hardening material in a curing region when applied in forming patterns on the surface of the hardening material, excellent uncured region removability, and excellent pattern formability; a color filter having colored patterns, which is formed by using the curable composition and has excellent resolution and adhesiveness to the support; and a manufacturing method of the coloring filter with high productivity.			
IT	1037304-40-7			
	RL: TEM (Technical or engineered material use); USES (Uses) (curable composition, color filter, and manufacturing method of the same)			
RN	1037304-40-7 CAPLUS			
CN	1,2,3,4-Cyclobutanetetracarboxylic acid, 1-[2-hydroxy-3-[(2-methyl-1-oxo-2-propen-1-yl)oxy]propyl] ester, polymer with 2-methyl-2-propenamide, phenylmethyl 2-methyl-2-propenoate and 2-propen-1-yl 2-methyl-2-propenoate (CA INDEX NAME)			
CM	1			
CRN	1037304-39-4			
CMF	C15 H18 O11			



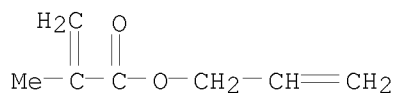
CM 2

CRN 2495-37-6  
CMF C11 H12 O2



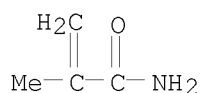
CM 3

CRN 96-05-9  
CMF C7 H10 O2



CM 4

CRN 79-39-0  
CMF C4 H7 N O



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2008:526531 CAPLUS  
DOCUMENT NUMBER: 148:497426  
TITLE: Heat-, moisture-, and light-resistance polymer compositions for packaging optical semiconductors  
INVENTOR(S): Saito, Satoshi; Nishimura, Naoya  
PATENT ASSIGNEE(S): NOF Corporation, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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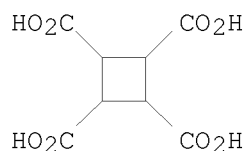
	JP 2008101135	A	20080501	JP 2006-285306	20061019
PRIORITY APPLN. INFO.:				JP 2006-285306	20061019

AB The compns. with carboxy (derivative)/epoxy equivalent ratio (NA/NB) 0.1-3.0 comprise (A) (un)substituted 1,2,3,4-cyclobutanetetracarboxylic acid (I), monoanhydrides of I, and/or dianhydrides of I (substituent = C1-3 alkyl) and (B) epoxy resins having cyclohexane ring skeletons. Thus, a composition (NA/NB 0.89) containing 32.3 parts 1,2,3,4-cyclobutanetetracarboxylic dianhydride prepared from maleic anhydride and 67.7 parts hydrogenated bisphenol A epoxy resin (Epikote YX 8000) was cured to give a test piece showing Tg 125°, and light transmittance at 400 nm 95 and 90% before and after heating at 200° for 24 h, resp. IC samples packaged with the composition showed good resistance to a pressure cooker test.

IT 53159-92-5P, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (crosslinker; heat-, moisture-, and light-resistance polymer compns. for packaging optical semiconductors)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



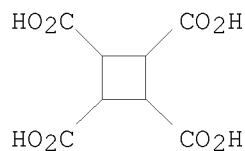
IT 1021425-30-8P, 1,2,3,4-Cyclobutanetetracarboxylic acid-Epikote YX 8000 copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (heat-, moisture-, and light-resistance polymer compns. for packaging optical semiconductors)

RN 1021425-30-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 2,2'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxymethylene)]bis[oxirane] (CA INDEX NAME)

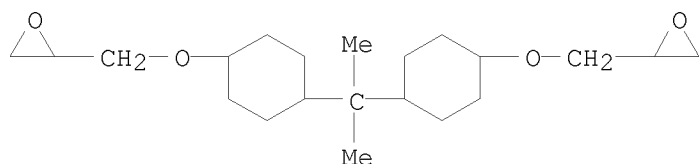
CM 1

CRN 53159-92-5  
 CMF C8 H8 O8



CM 2

CRN 13410-58-7  
 CMF C21 H36 O4



L4 ANSWER 5 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:526529 CAPLUS

DOCUMENT NUMBER: 148:497425

TITLE: Storage-stable polymer compositions with good light and heat resistance for packaging optical semiconductors

INVENTOR(S): Saito, Satoshi; Nishimura, Naoya

PATENT ASSIGNEE(S): NOF Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17pp.

CODEN: JKXXAF

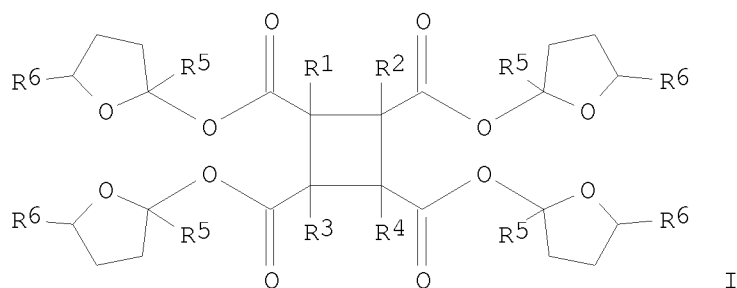
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2008101134	A	20080501	JP 2006-285303	20061019
PRIORITY APPLN. INFO.: GI			JP 2006-285303	20061019



I

AB The compns. with hemiacetal/epoxy equivalent ratio (NA/NB) 0.2-2.0 comprise (A) hemiacetal ester curing agents of I (R1-4 = H, C1-3 alkyl; R5 = H, C1-6 alkyl, methoxy, ethoxy; R6 = H, halo, C1-10 alkyl, Ph, alkoxy, cyclohexyl) and (B) main components containing (b1) epoxy resins having cyclohexane ring skeletons and (b2) epoxy-modified silicones in b1/b2 weight ratio of 50/50 to 90/10. Thus, a composition (NA/NB 0.9) containing I (R1 =

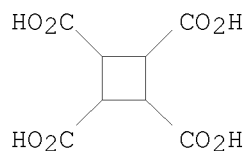
R2 = R3 = R4 = R5 = R6 = H) prepared by reacting 1,2,3,4-cyclobutanetetracarboxylic acid with 2,3-dihydrofuran 34.6, hydrogenated bisphenol A epoxy resin (Epikote YX 8000) 54.6, and 1,1,3,3-tetramethyl-1,3-bis(oxiranylmethoxypropyl)disiloxane (TSL 9906) 6.1 parts was cured to give a test piece showing Tg 130°, and light transmittance at 400 nm 84% before and after heating at 200° for 24 h or irradiating with high-pressure mercury lamp at 200 W for 50,000 h.

IT 53159-92-5P, 1,2,3,4-Cyclobutanetetracarboxylic acid 1021424-24-7P

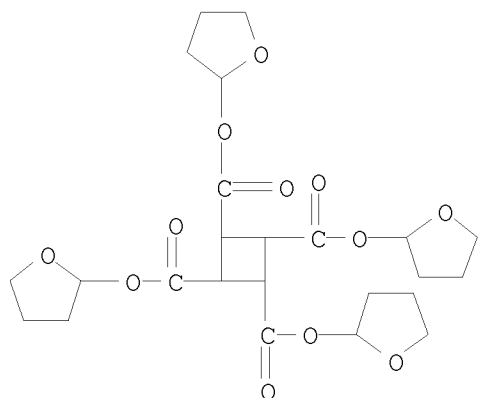
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(storage-stable polymer compns. with good light and heat resistance for

packaging optical semiconductors)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



RN 1021424-24-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetrakis(tetrahydro-2-furanyl) ester (CA INDEX NAME)

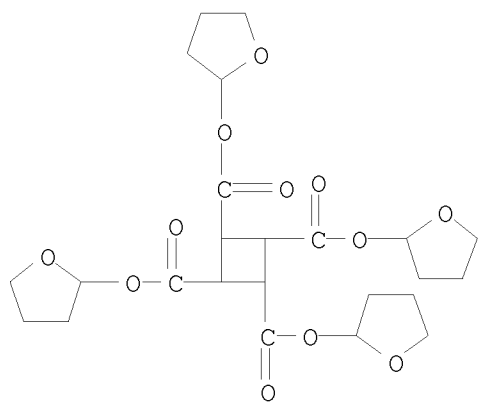


IT 1021424-25-8P 1021424-29-2P 1021424-30-5P  
 1021424-32-7P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (storage-stable polymer compns. with good light and heat resistance for packaging optical semiconductors)  
 RN 1021424-25-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetrakis(tetrahydro-2-furanyl) ester, polymer with  
 2,2'-[(1-methylethylidene)bis(4,1-cyclohexanedioxy)methylene]]bis[oxirane] and  
 1,1,3,3-tetramethyl-1,3-bis[3-(2-oxiranylethoxy)propyl]disiloxane (CA INDEX NAME)

CM 1

CRN 1021424-24-7  
 CMF C24 H32 O12

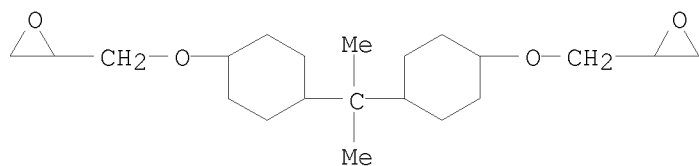




CM 2

CRN 13410-58-7

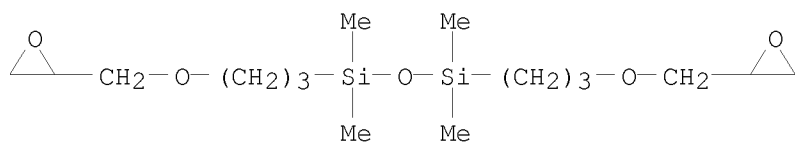
CMF C21 H36 O4



CM 3

CRN 126-80-7

CMF C16 H34 O5 Si2



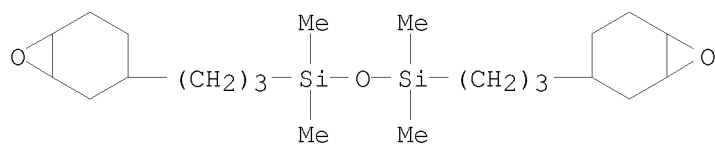
RN 1021424-29-2 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
1,2,3,4-tetrakis(tetrahydro-2-furanyl) ester, polymer with  
2,2'-[methylenebis(4,1-cyclohexanediylloxymethylene)]bis[oxirane] and  
3,3'-[(1,1,3,3-tetramethyl-1,3-disiloxanediyl)di-3,1-propanediyl]bis[7-oxabicyclo[4.1.0]heptane] (CA INDEX NAME)

CM 1

CRN 1021424-28-1

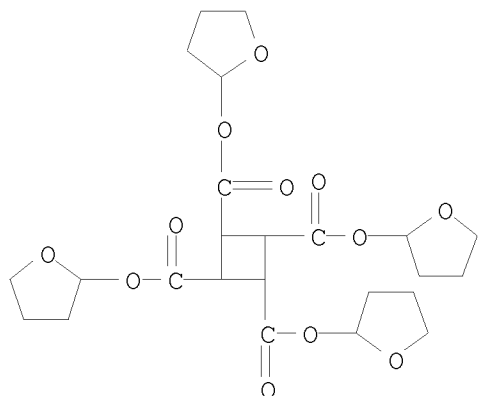
CMF C22 H42 O3 Si2



CM 2

CRN 1021424-24-7

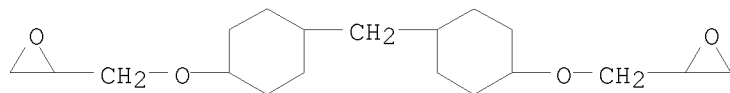
CMF C24 H32 O12



CM 3

CRN 59333-65-2

CMF C19 H32 O4



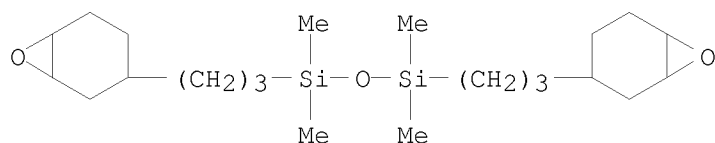
RN 1021424-30-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
1,2,3,4-tetrakis(tetrahydro-2-furanyl) ester, polymer with  
7-oxabicyclo[4.1.0]hept-3-ylmethyl  
7-oxabicyclo[4.1.0]heptane-3-carboxylate and  
3,3'-[(1,1,3,3-tetramethyl-1,3-disiloxanediyl)di-3,1-propanediyl]bis[7-  
oxabicyclo[4.1.0]heptane] (CA INDEX NAME)

CM 1

CRN 1021424-28-1

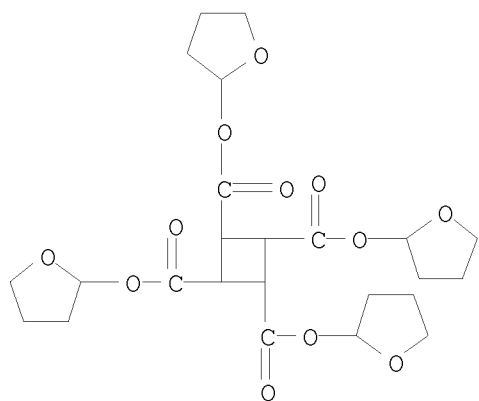
CMF C22 H42 O3 Si2



CM 2

CRN 1021424-24-7

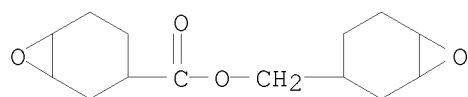
CMF C24 H32 O12



CM 3

CRN 2386-87-0

CMF C14 H20 O4



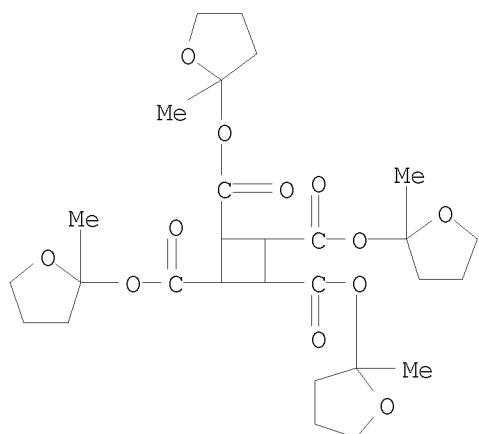
RN 1021424-32-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
1,2,3,4-tetrakis(tetrahydro-2-methyl-2-furanyl) ester, polymer with  
2,2'-[(1-methylethylidene)bis(4,1-  
cyclohexanediylloxymethylene)]bis[oxirane] and  
1,1,3,3-tetramethyl-1,3-bis[3-(2-oxiranylmethoxy)propyl]disiloxane (CA  
INDEX NAME)

CM 1

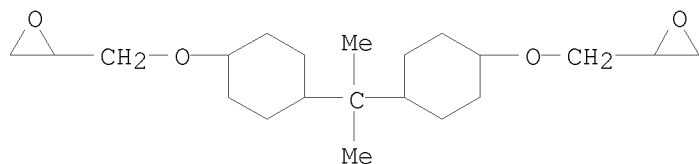
CRN 1021424-31-6

CMF C28 H40 O12



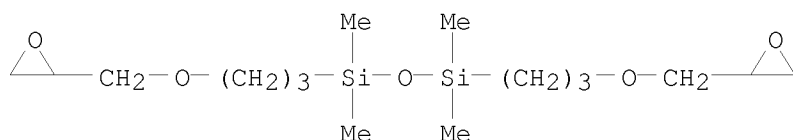
CM 2

CRN 13410-58-7  
CMF C21 H36 O4



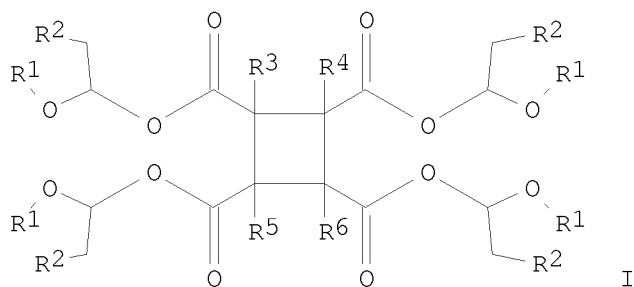
CM 3

CRN 126-80-7  
CMF C16 H34 O5 Si2



L4 ANSWER 6 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2008:526243 CAPLUS  
DOCUMENT NUMBER: 148:497029  
TITLE: Cyclobutanetetracarboxylic acid hemiacetal esters,  
thermosetting compositions containing them, and cured  
products  
INVENTOR(S): Saito, Satoshi; Nishimura, Naoya  
PATENT ASSIGNEE(S): NOF Corporation, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 21pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008100949	A	20080501	JP 2006-285305	20061019
PRIORITY APPLN. INFO.: GI			JP 2006-285305	20061019



AB The esters are represented by I (R1 = C1-7 alkyl; R2 = H, C1-2 alkyl; R1R2

may form ring; R3-R6 = H, C1-3 alkyl). The compns., useful for electronic packaging materials for LEDs, contain the esters and cyclohexane ring-containing epoxy resins at molar equivalent ratio of ester groups to epoxy groups 0.2-2.0. Thus, maleic anhydride was photocyclized with di-Et carbonate, hydrolyzed, and esterified with 2,3-dihydrofuran to give tetra(2-tetrahydrofuranyl) cyclobutane-1,2,3,4-tetracarboxylate (II), which was blended with Epikote YX 8000 (hydrogenated bisphenol A epoxy resin) and curing catalyst to give a composition showing good storage stability. A cured product of the composition showed Tg 135° and good weather resistance.

IT 1021457-37-3P 1021457-39-5P 1021457-40-8P

1021457-41-9P 1021457-42-0P 1021457-43-1P

RL: IMF (Industrial manufacture); PREP (Preparation)

(storage-stable thermosetting cyclohexane group-containing epoxy resin

compns. containing cyclobutanetetracarboxylic acid hemiacetal ester curing agents)

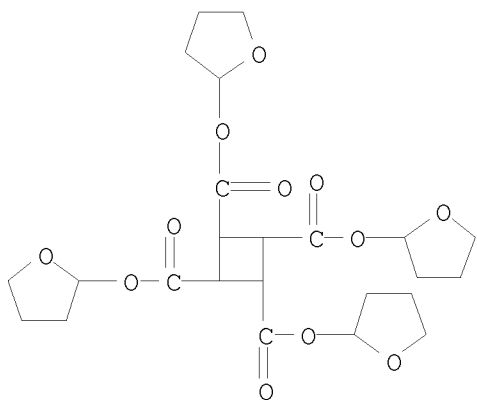
RN 1021457-37-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
1,2,3,4-tetrakis(tetrahydro-2-furanyl) ester, polymer with  
2,2'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxymethylene)]bis[oxirane] (CA INDEX NAME)

CM 1

CRN 1021424-24-7

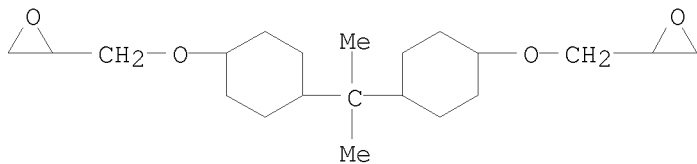
CMF C24 H32 O12



CM 2

CRN 13410-58-7

CMF C21 H36 O4



RN 1021457-39-5 CAPLUS

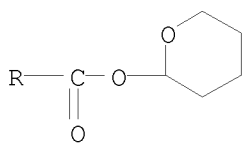
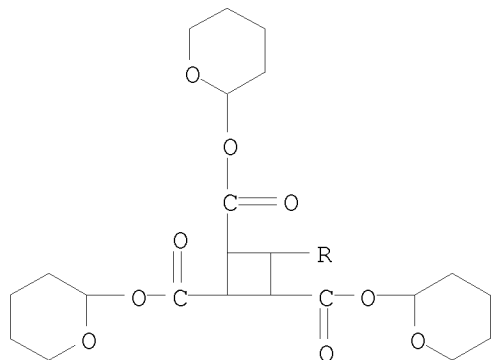
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
1,2,3,4-tetrakis(tetrahydro-2H-pyran-2-yl) ester, polymer with  
2,2'-[(1-methylethylidene)bis(4,1-

cyclohexanediylloxymethylene)]bis[oxirane] (CA INDEX NAME)

CM 1

CRN 1021457-35-1

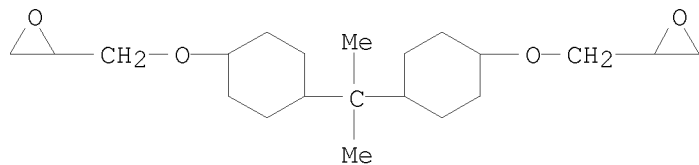
CMF C28 H40 O12



CM 2

CRN 13410-58-7

CMF C21 H36 O4



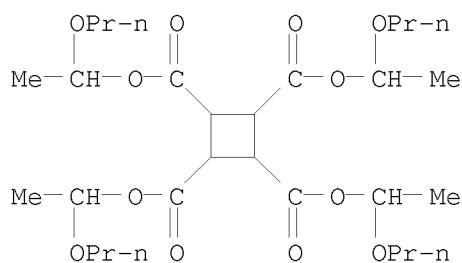
RN 1021457-40-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetrakis(1-propoxyethyl) ester, polymer with 2,2'-[(1-methylethylidene)bis(4,1-cyclohexanediylloxymethylene)]bis[oxirane] (CA INDEX NAME)

CM 1

CRN 1021457-36-2

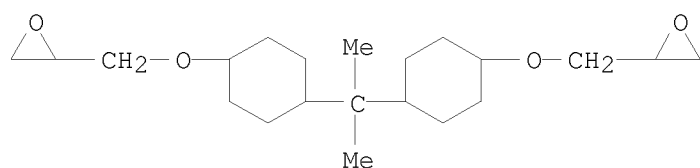
CMF C28 H48 O12



CM 2

CRN 13410-58-7

CMF C21 H36 O4



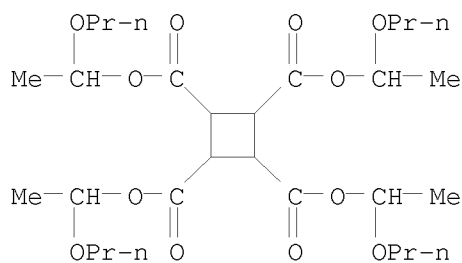
RN 1021457-41-9 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetrakis(1-propoxyethyl) ester, polymer with 2,2'-[methylenebis(4,1-cyclohexanediylloxymethylene)]bis[oxirane] (CA INDEX NAME)

CM 1

CRN 1021457-36-2

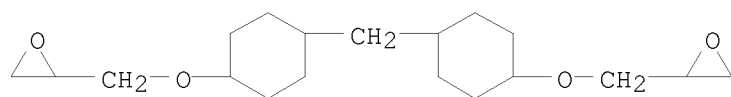
CMF C28 H48 O12



CM 2

CRN 59333-65-2

CMF C19 H32 O4



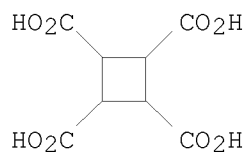
RN 1021457-42-0 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetrakis(1-propoxyethyl) ester, polymer with 7-oxabicyclo[4.1.0]hept-3-ylmethyl

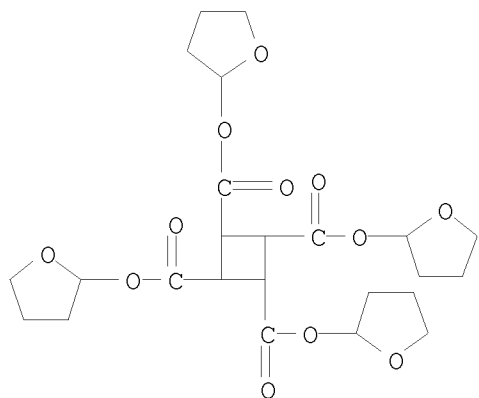
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*



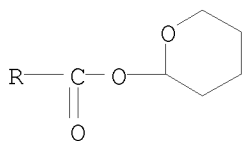
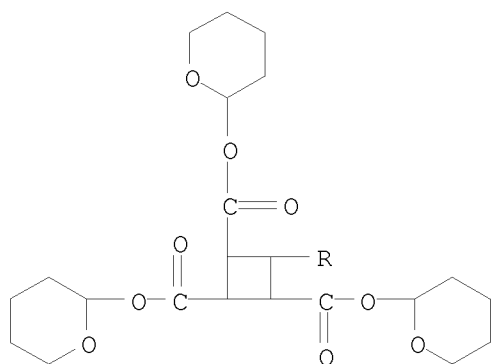
IT 53159-92-5P, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 1021424-24-7P 1021457-35-1P 1021457-36-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (storage-stable thermosetting cyclohexane group-containing epoxy resin  
 compns. containing cyclobutanetetracarboxylic acid hemiacetal ester curing  
 agents)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



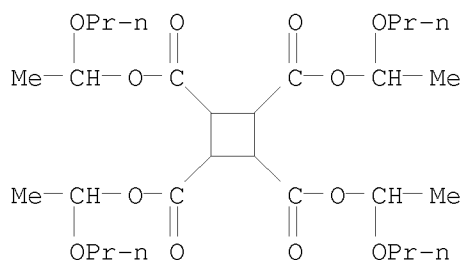
RN 1021424-24-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetrakis(tetrahydro-2-furanyl) ester (CA INDEX NAME)



RN 1021457-35-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetrakis(tetrahydro-2H-pyran-2-yl) ester (CA INDEX NAME)



RN 1021457-36-2 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetrakis(1-propoxyethyl)  
 ester (CA INDEX NAME)



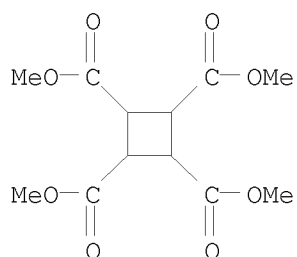
L4 ANSWER 7 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2008:440466 CAPLUS  
 DOCUMENT NUMBER: 148:413951  
 TITLE: Thermally hardening resin composition for protection  
 film of color filter  
 INVENTOR(S): Tamura, Mieko; Fujimura, Toshinobu; Nakajima,  
 Yoshikazu; Nishiwaki, Yujiro; Saito, Satoshi  
 PATENT ASSIGNEE(S): NOF Corporation, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 22pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008083420	A	20080410	JP 2006-263636	20060927
PRIORITY APPLN. INFO.:			JP 2006-263636	20060927

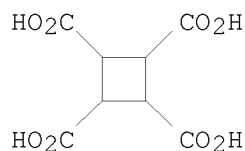
AB The invention relates to a thermally hardening resin composition for a protection film of a color filter that is suited for use in a liquid crystal display, a solid state camera, etc., comprising: (A) an epoxy-containing copolymer prepared by an ethylenic bond-containing monomer, and an epoxy

group-containing monomer; (B) multiepoxy-containing resin derived from bisphenol A epoxy resin, bisphenol A novolac epoxy resin and their ring hydrogenated resin; and (C) cyclobutane tetracarboxylic acid hemiacetal ester that is derived from the addition reaction of 1,2,3,4-cyclobutane tetracarboxylic acid and vinyl ether or unsatd. cyclic ether.

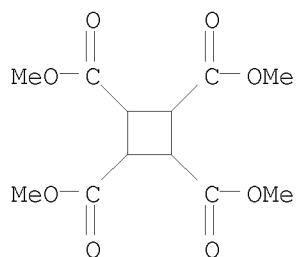
IT 14495-41-1P 53159-92-5P,  
1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(thermally hardening resin composition for protection film of color filter)  
RN 14495-41-1 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



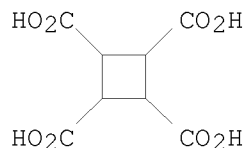
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



IT 14495-41-1DP, reaction products with Pr vinyl ether  
53159-92-5DP, 1,2,3,4-Cyclobutanetetracarboxylic acid, reaction products with Pr vinyl ether or dihydrofuran  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(thermally hardening resin composition for protection film of color filter)  
RN 14495-41-1 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 8 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:270751 CAPLUS

DOCUMENT NUMBER: 148:513206

TITLE: A cholesterol biosynthesis inhibitor blocks  
Staphylococcus aureus virulence

AUTHOR(S): Liu, Chia-I.; Liu, George Y.; Song, Yongcheng; Yin,  
Fenglin; Hensler, Mary E.; Jeng, Wen-Yih; Nizet,  
Victor; Wang, Andrew H.-J.; Oldfield, Eric

CORPORATE SOURCE: Institute of Biological Chemistry, Academia Sinica,  
Taipei, 11529, Taiwan

SOURCE: Science (Washington, DC, United States) (2008),  
319(5868), 1391-1394

CODEN: SCIEAS; ISSN: 0036-8075

PUBLISHER: American Association for the Advancement of Science

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Staphylococcus aureus produces hospital- and community-acquired  
infections, with methicillin-resistant *S. aureus* posing a serious public  
health threat. The golden carotenoid pigment of *S. aureus*,  
staphyloxanthin, promotes resistance to reactive oxygen species and host  
neutrophil-based killing, and early enzymic steps in staphyloxanthin  
production resemble those for cholesterol biosynthesis. The authors  
determined the  
crystal structures of *S. aureus* dehydrosqualene synthase (CrtM) at 1.58  
angstrom resolution, finding structural similarity to human squalene synthase  
(SQS). They screened nine SQS inhibitors and determined the structures of  
three, bound to CrtM. One, previously tested for cholesterol-lowering  
activity in humans, blocked staphyloxanthin biosynthesis in vitro (median  
inhibitory concentration .apprx.100 nM), resulting in colorless bacteria with  
increased susceptibility to killing by human blood and to innate immune  
clearance in a mouse infection model. This finding represents proof of  
principle for a virulence factor-based therapy against *S. aureus*.

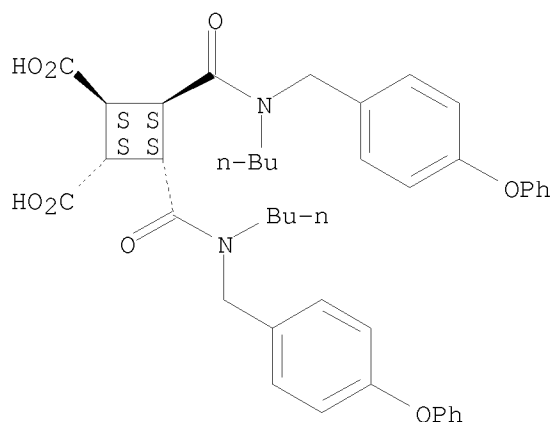
IT 169941-92-8, BPH 660

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(cholesterol biosynthesis inhibitor blocks Staphylococcus aureus  
virulence)

RN 169941-92-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[butyl[(4-  
phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

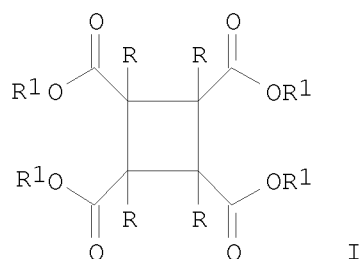
Relative stereochemistry.



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2008:159575 CAPLUS  
 DOCUMENT NUMBER: 148:217231  
 TITLE: Cyclobutanetetracarboxylate compound and preparation method thereof  
 INVENTOR(S): Lai, Ming-Chih; Chang, Chia-Wen; Ong, Chi-Wi  
 PATENT ASSIGNEE(S): Eternal Chemical Co., Ltd., Taiwan  
 SOURCE: U.S. Pat. Appl. Publ., 6pp., Cont.-in-part of U.S. Ser. No. 253,798.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

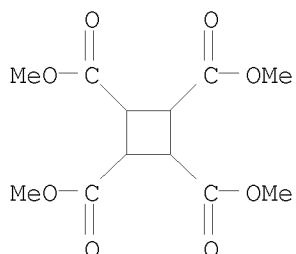
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20080033199	A1	20080207	US 2007-888703	20070802
US 7402693	B2	20080722		
TW 279403	B	20070421	TW 2004-93131887	20041020
US 20060089505	A1	20060427	US 2005-253798	20051019
PRIORITY APPLN. INFO.:			TW 2004-93131887	A 20041020
			US 2005-253798	A2 20051019
OTHER SOURCE(S):		CASREACT 148:217231		
GI				



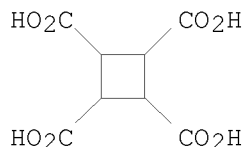
AB The invention provides a cyclobutanetetracarboxylate compound of general formula I and a preparation method thereof: in which R can be the same or R is different from each other and independently represents hydrogen or a halogen or a monovalent organic radical; and R1 is a C1-C4 alkyl. Thus,

fumaric acid was esterified with methanol to give di-Me fumarate which was irradiated by 365 nm UV lights to give tetra-Me cyclobutane-1,2,3,4-tetracarboxylate which was hydrolyzed with HCl to give cyclobutane-1,2,3,4-tetracarboxylic acid which was cyclized to give 1,2,3,4-cyclobutanetetracarboxylic dianhydride.

IT 14495-41-1P, Tetramethyl cyclobutane-1,2,3,4-tetracarboxylate  
 53159-92-5P, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of cyclobutanetetracarboxylate compound from fumaric acid)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:132163 CAPLUS  
 DOCUMENT NUMBER: 149:154090  
 TITLE: Oriented liquid crystal films formed by print method  
 INVENTOR(S): Park, Jeong Gi; Ha, Hyeon Dae; Cho, Gi Yun; Lee, Seung Seop; Han, Man Hui  
 PATENT ASSIGNEE(S): Korea Advanced Institute of Science and Technology, S. Korea  
 SOURCE: Repub. Korean Kongkae Taeho Kongbo, 10pp.  
 CODEN: KRXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Korean  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2008003621	A	20080108	KR 2006-62077	20060703
KR 831067	B1	20080521		

PRIORITY APPLN. INFO.: KR 2006-62077 20060703

AB Oriented liquid crystal films are prepared by placing a metal mold having a specific micro-structure on a polymer film-formed substrate and applying heat or pressure on the polymer film. Thus, a 5% NMP solution of a

4,4'-hexafluoroisopropylidene diphthalic anhydride-4,4'-oxydianiline copolymer was applied on a glass substrate, placing a mold having an U-shape microstructure on the coated polymer layer, thermally-cured the polymer layer, two resulting polymer-coated glass substrate were fabricated into a cell, and a liquid crystal material was poured into the cell, showing liquid crystal order parameter 0.53, pretilt angle 10.3°, and azimuthal anchoring energy  $1.138 \times 10^{-4} \text{ J/m}^2$ .

IT 122402-70-4 479207-73-3

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(oriented liquid crystal films formed by print method)

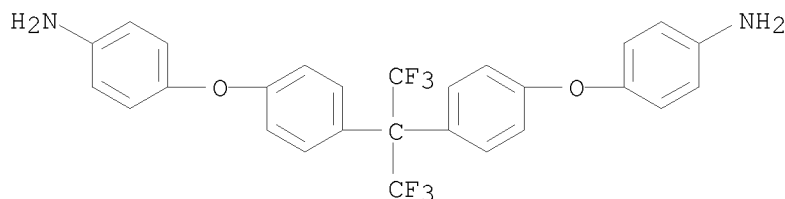
RN 122402-70-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 69563-88-8

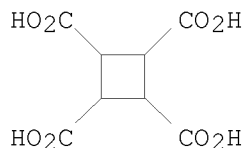
CMF C27 H20 F6 N2 O2



CM 2

CRN 53159-92-5

CMF C8 H8 O8



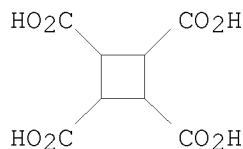
RN 479207-73-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 53159-92-5

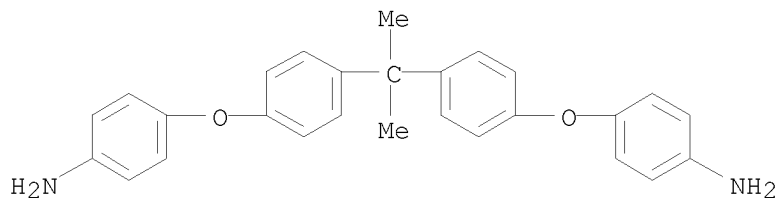
CMF C8 H8 O8



CM 2

CRN 13080-86-9

CMF C27 H26 N2 O2



L4 ANSWER 11 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:1056263 CAPLUS

DOCUMENT NUMBER: 147:365922

TITLE: Manufacture of cyclobutane-1,2,3,4-tetracarboxylic acids by photodimerization of fumaric acids

INVENTOR(S): Kimura, Masaru

PATENT ASSIGNEE(S): Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

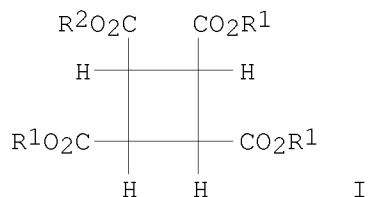
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007238460	A	20070920	JP 2006-58987	20060306
PRIORITY APPLN. INFO.:			JP 2006-58987	20060306
OTHER SOURCE(S):	MARPAT	147:365922		

GI



AB Cyclobutane-1,2,3,4-tetracarboxylic acids I (R<sub>1</sub> = H, C<sub>1</sub>-10 alkyl, cyclohexyl, Ph), useful for polyimides for electronic and optical materials, are manufactured by photodimerization of R<sub>1</sub>O<sub>2</sub>CCH:CHCO<sub>2</sub>R<sub>1</sub> (R<sub>1</sub> = same as above) in H<sub>2</sub>O. Thus, di-Me fumarate was irradiated with a high-pressure Hg lamp in H<sub>2</sub>O to give 85% cis, trans, cis-tetramethyl cyclobutane-1,2,3,4-tetracarboxylate.

IT 1032-95-7P

RL: IMF (Industrial manufacture); PREP (Preparation)

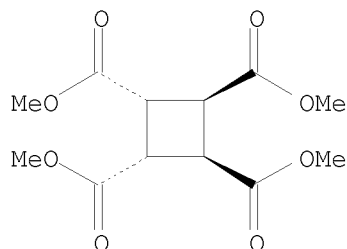
(manufacture of cyclobutanetetracarboxylic acids as monomers for polyimides by photodimerization of fumaric acids in H<sub>2</sub>O)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)



Relative stereochemistry.



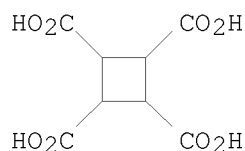
L4 ANSWER 12 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2007:696915 CAPLUS  
DOCUMENT NUMBER: 147:268329  
TITLE: Evaluations of Molecular Docking Programs for Virtual Screening  
AUTHOR(S): Onodera, Kenji; Satou, Kazuhito; Hirota, Hiroshi  
CORPORATE SOURCE: RIKEN Genomic Sciences Center, 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, 230-0045, Japan  
SOURCE: Journal of Chemical Information and Modeling (2007), 47(4), 1609-1618  
CODEN: JCISD8; ISSN: 1549-9596  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Structure-based virtual screening is carried out using mol. docking programs. A number of such docking programs are currently available, and the selection of docking program is difficult without knowing the characteristics or performance of each program. In this study, the screening performances of three mol. docking programs, DOCK, AutoDock, and GOLD, were evaluated with 116 target proteins. The screening performances were validated using two novel stds., along with a traditional enrichment rate measurement. For the evaluations, each docking run was repeated 1000 times with three initial conformations of a ligand. While each docking program has some merit over the other docking programs in some aspects, DOCK showed an unexpectedly better screening performance in the enrichment rates. Finally, we made several recommendations based on the evaluation results to enhance the screening performances of the docking programs.

IT 53159-92-5, NSC 131453  
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)  
(evaluations of mol. docking programs for virtual screening)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



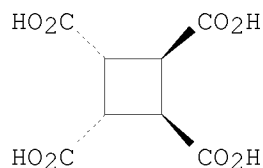
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2007:614437 CAPLUS  
DOCUMENT NUMBER: 147:234694  
TITLE: Template-Controlled Face-to-Face Stacking of Olefinic

AUTHOR(S): Mei, Xuefeng; Liu, Shuanglong; Wolf, Christian  
 CORPORATE SOURCE: Department of Chemistry, Georgetown University,  
 Washington, DC, 20057, USA  
 SOURCE: Organic Letters (2007), 9(14), 2729-2732  
 CODEN: ORLEF7; ISSN: 1523-7060  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 147:234694

AB A rigid 1,8-dipyridylnaphthalene template for supramol. organization of  
 unsatd. dicarboxylic acids in the solid state was developed.  
 Self-assembly of the template and aromatic dicarboxylic acids generates  
 nondistorted paracyclophane and pyridinophane architectures with perfectly  
 superimposed  $\pi$ -systems. The dipyridyl template can be used to promote  
 stereoselective solid-state dimerization of olefinic dicarboxylic acids.  
 IT 38841-00-8P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (crystallog.; template-controlled face-to-face stacking of olefinic and  
 aromatic carboxylic acids in solid state)  
 RN 38841-00-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:518666 CAPLUS

DOCUMENT NUMBER: 147:218267

TITLE: Composition of PM2.5 during the summer of 2003 in  
 Research Triangle Park, North Carolina

AUTHOR(S): Lewandowski, Michael; Jaoui, Mohammed; Kleindienst,  
 Tadeusz E.; Offenberg, John H.; Edney, Edward O.

CORPORATE SOURCE: US Environmental Protection Agency, National Exposure  
 Research Laboratory, RTP NC 27711, USA

SOURCE: Atmospheric Environment (2007), 41(19), 4073-4083  
 CODEN: AENVEQ; ISSN: 1352-2310

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A field study was carried out during the summer of 2003 to examine the  
 overall composition of fine particulate matter (PM2.5) in Research Triangle  
 Park, North Carolina, USA, with particular emphasis on polar compds. from  
 secondary organic aerosol (SOA). Collected samples were examined for  
 gravimetric mass, organic and elemental carbon concns., inorg. ion concns.,  
 and detailed organic composition On average, the ambient PM2.5 was found to  
 consist  
 of 41% organic matter, 2% elemental carbon, 12% ammonium, 37% sulfate, and  
 less than 1% nitrate and oxalate. Mass concns. ranged from 6.4 to 31.4  
 $\mu\text{g m}^{-3}$ . The acidity of the aerosol was also estimated, and higher PM2.5  
 and organic mass concns. were generally observed under acidic conditions. A  
 suite of chemical derivatization methods was used in conjunction with gas

chromatog.-mass spectrometry (GC-MS) to identify and quantify 29 polar organic compds. Most of these compds. have been previously identified in laboratory photooxidn. studies from hydrocarbon precursors, including isoprene, monoterpenes,  $\beta$ -caryophyllene, and toluene. From laboratory studies, several of these polar compds. have been proposed as tracers for SOA, and concns. measured in this study indicate the contributions of the precursor hydrocarbons to ambient SOA could be important. Some of the organic tracers, particularly those associated with isoprene SOA, represented a greater fraction of the organic carbon when the aerosol was acidic.

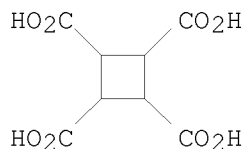
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid

RL: POL (Pollutant); OCCU (Occurrence)

(composition of PM2.5 during summer of 2003 in Research Triangle Park, North Carolina)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:376885 CAPLUS

DOCUMENT NUMBER: 146:379613

TITLE: Preparation of cyclobutanebis[bis(carboxymethyl)amides] as chelating agents

INVENTOR(S): Ichikawa, Shuji

PATENT ASSIGNEE(S): Nof Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

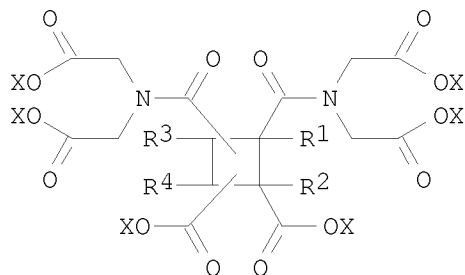
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2007084516	A	20070405	JP 2005-278491	20050926
PRIORITY APPLN. INFO.:			JP 2005-278491	20050926
OTHER SOURCE(S):		CASREACT 146:379613; MARPAT 146:379613		

GI



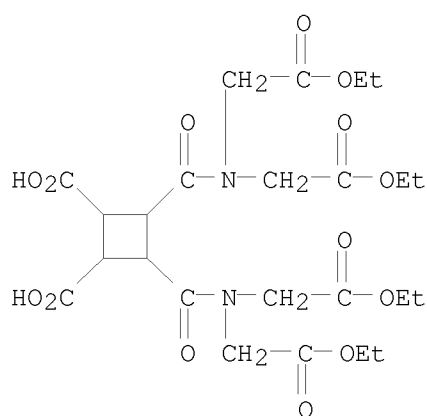
I

AB Cyclobutanebis[bis(carboxymethylamides)] I (R1-R4 = H, Me; X = alkali metal, H) are prepared by amidation of corresponding cyclobutanetetracarboxylic dianhydrides (II) with bis(carboxymethyl)amines (III) in solvents at II/III molar ratio from 1/1.8 to 1/2.5. Thus, 50.00 g cyclobutane-1,2,3,4-tetracarboxylic acid-1,2:3,4-dianhydride was amidated with 96.48 g bis(ethoxycarbonylmethyl)amine in MeCN and hydrolyzed with NaOH to give I (R1 = R2 = R3 = R4 = H, X = Na) showing good Ca ion chelating property.

IT 932391-98-5P 932392-01-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of cyclobutanebis[bis(carboxymethyl)amides] as chelating agents by amidation)

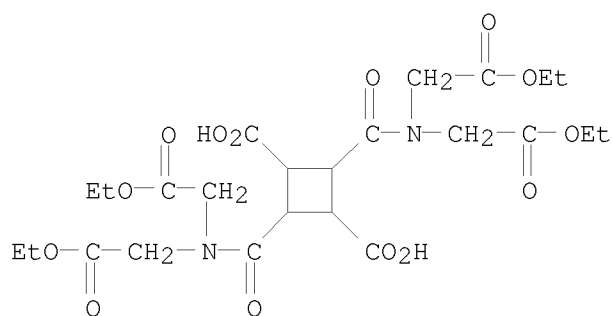
RN 932391-98-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis(2-ethoxy-2-oxoethyl)amino]carbonyl]- (CA INDEX NAME)



RN 932392-01-3 CAPLUS

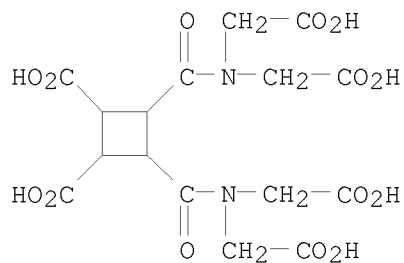
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis(2-ethoxy-2-oxoethyl)amino]carbonyl]- (CA INDEX NAME)



IT 932391-99-6P 932392-02-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of cyclobutanebis[bis(carboxymethyl)amides] as chelating agents by amidation)

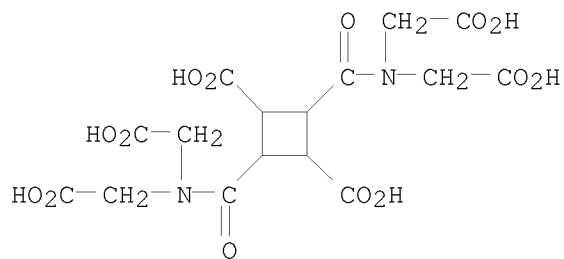
RN 932391-99-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis(carboxymethyl)amino]carbonyl]-, sodium salt (1:6) (CA INDEX NAME)



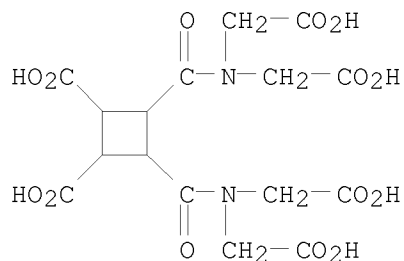
●6 Na

RN 932392-02-4 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis(carboxymethyl)amino]carbonyl]-, sodium salt (1:6) (CA INDEX NAME)

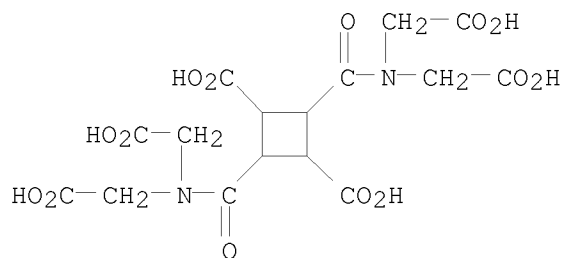


●6 Na

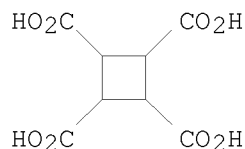
IT 932392-00-2P 932392-03-5P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of cyclobutanebis[bis(carboxymethyl)amides] as chelating agents by amidation)  
 RN 932392-00-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis(carboxymethyl)amino]carbonyl]- (CA INDEX NAME)



RN 932392-03-5 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis(carboxymethyl)amino]carbonyl]- (CA INDEX NAME)



L4 ANSWER 16 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2007:239216 CAPLUS  
 DOCUMENT NUMBER: 148:134329  
 TITLE: Hybrid inorganic-organic frameworks containing magnesium: Synthesis and structures of magnesium squarate, diglycolate, and glutarate, and potassium magnesium cyclobutanetetracarboxylate  
 AUTHOR(S): Hulvey, Zeric; Cheetham, Anthony K.  
 CORPORATE SOURCE: Materials Research Laboratory, University of California, Santa Barbara, CA, 93106-5121, USA  
 SOURCE: Solid State Sciences (2007), 9(2), 137-143  
 CODEN: SSSCFJ; ISSN: 1293-2558  
 PUBLISHER: Elsevier Masson SAS  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 148:134329  
 AB Four new Mg containing metal-organic hybrid compds. were synthesized in an effort to prepare low-d. materials for H storage. The compds. were prepared hydrothermally and characterized using single crystal x-ray diffraction. Three of these compds. are analogs of known transition metal structures with squarate ( $\text{Mg}(\text{H}_2\text{O})_2(\text{C}_4\text{O}_4)$  1,  $\text{Pn-3n}$ ,  $a$  16.276(5) Å), diglycolate ( $\text{Mg}(\text{H}_2\text{O})(\text{C}_4\text{H}_4\text{O}_5) \cdot \text{H}_2\text{O}$  2,  $\text{P212121}$ ,  $a$  6.860(1),  $b$  9.993(1),  $c$  10.884(1) Å,  $R_1 = 0.0341$ ), and glutarate ( $\text{Mg}(\text{C}_5\text{H}_6\text{O}_4)$  3,  $R-3$ ,  $a$  10.744(2),  $c$  28.677(5) Å,  $R_1 = 0.0554$ ) ligands; the 4th is a novel structure using cyclobutanetetracarboxylate ( $\text{K}_2\text{Mg}(\text{H}_2\text{O})_2(\text{C}_8\text{H}_4\text{O}_8)$  4,  $\text{Pccn}$ ,  $a$  9.382(1),  $b$  14.410(2),  $c$  8.725(1) Å,  $R_1 = 0.0465$ ) which contains K as well as Mg cations.  
 IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for preparation of magnesium carboxylate complexes)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2007:41215 CAPLUS  
 DOCUMENT NUMBER: 146:131913  
 TITLE: Solvent for printing, pattern composition for printing comprising the solvent, and patterning method using

the composition  
 INVENTOR(S): Yoo, Hong Suk; Kim, Chul Ho; Lee, Jung Jae; Oh, Tae Young  
 PATENT ASSIGNEE(S): Lg Philips Lcd Co., Ltd., S. Korea  
 SOURCE: U.S. Pat. Appl. Publ., 17pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070009835	A1	20070111	US 2005-319302	20051227
KR 2007002204	A	20070105	KR 2005-57603	20050630
PRIORITY APPLN. INFO.:			KR 2005-57603	A 20050630

AB Disclosed is a solvent for printing which comprises a first solvent selected from the group consisting of acetone, Me Et ketone, Me acetate, Et acetate, methanol and mixts. thereof, and a second solvent selected from the group consisting of propylene glycol monomethyl ether acetate (PGMEA), propylene glycol monomethyl ether (PGME), isopropanol, Bu acetate, ethyl-3-ethoxypropionate and mixts. thereof. Further disclosed are a pattern composition for printing comprising the solvent for printing, and a patterning method using the composition The use of the solvent for printing enables formation of an accurate pattern.

IT 918667-98-8  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solvent for printing, pattern composition for printing comprising the solvent, and patterning method using the composition)

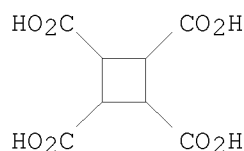
RN 918667-98-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 2,3-dihydroxypropyl 2-propenoate and 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (CA INDEX NAME)

CM 1

CRN 53159-92-5

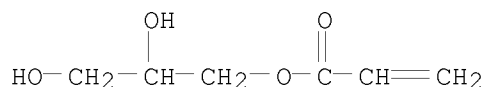
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CM 2

CRN 10095-20-2

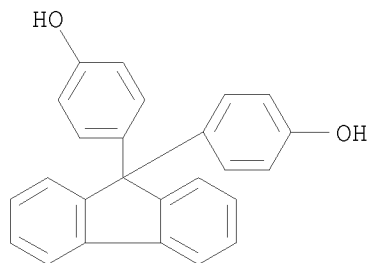
CMF C6 H10 O4



CM 3

CRN 3236-71-3

CMF C25 H18 O2



L4 ANSWER 18 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2007:36497 CAPLUS  
 DOCUMENT NUMBER: 146:124522  
 TITLE: Aqueous glycol-based heat transfer agents containing alicyclic carboxylic acid and carboxylate salts as buffering agents  
 INVENTOR(S): Egawa, Hiroshi; Ito, Naoshi  
 PATENT ASSIGNEE(S): Japan  
 SOURCE: U.S. Pat. Appl. Publ., 6pp., Cont.-in-part of Appl. No. PCT/JP2003/016821.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070007489	A1	20070111	US 2006-473437	20060623
WO 2005063918	A1	20050714	WO 2003-JP16821	20031225
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

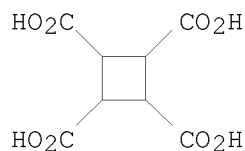
PRIORITY APPLN. INFO.: WO 2003-JP16821 A2 20031225

AB Heat transfer mediums, for heating and cooling systems, contain water, a glycol, an alc., and a glycol ether, as the main ingredients, and a pH buffering agent comprised of an alicyclic (with three to six-carbon atom-membered rings) compound with carboxylic acid or carboxylate salt functionality, optionally substituted by nitrogen or oxygen atoms, or a heterocyclic compound with oxygen or nitrogen atoms in the ring. The composition provides improved and long lasting buffering in actual use to maintain the pH value of the medium at pH 6-10. The compns. are useful in cooling systems for internal combustion engines (i.e., antifreeze), and as heat transfer agents for solar heating systems, floor heating systems, or in air conditioners.

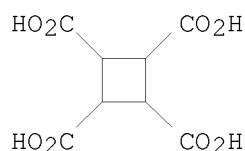
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 53159-92-5D, 1,2,3,4-Cyclobutanetetracarboxylic acid, salts  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (heat transfer fluids containing; aqueous glycol-based heat transfer agents  
 and  
 fluids containing alicyclic carboxylic acid and carboxylate salts as



buffering agents)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 19 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2006:465067 CAPLUS  
DOCUMENT NUMBER: 144:481083  
TITLE: Compounds which inhibits protein prenylation e.g.  
geranylgeranyltransferase or farnesyltransferase  
inhibitors for treating parkinson's disease  
INVENTOR(S): Schweighoffer, Fabien; Desire, Laurent  
PATENT ASSIGNEE(S): Exonhit Therapeutics SA, Fr.  
SOURCE: PCT Int. Appl., 51 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006051423	A1	20060518	WO 2005-IB3678	20051114
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
EP 1656931	A1	20060517	EP 2004-292697	20041115
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR, IS, YU			
EP 1811984	A1	20070801	EP 2005-807938	20051114
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR			
US 20080153758	A1	20080626	US 2008-719342	20080313
PRIORITY APPLN. INFO.:			EP 2004-292697	A 20041115

AB The invention relates to compds. and their uses, particularly in the pharmaceutical industry. The invention more specifically relates to new uses of compds. that inhibit the prenylation of proteins, in particular the geranylgeranyl and/or farnesyl modifications of proteins, for treating neurodegeneration involving oxidative stress and, more particularly, Parkinson's disease. The invention also relates to corresponding methods of treatment, and can be used in human subjects for preventive or curative treatment, either alone or in combination with other active agents or treatments. The present invention now surprisingly and unexpectedly demonstrates that such prenyl inhibitors exhibit potent activity against oxidative stress, and particularly in the treatment of Parkinson's Disease. The present invention represents the first report of the potent activity of prenylation inhibitors (e.g., GGT or FT inhibitors) against Parkinson's Disease and allows the development of novel and effective therapeutic approaches of this progressive and severe neurodegenerative disease. In order to identify pathways and targets to enable the discovery of new compds. for Parkinson's Disease (PD) treatments, the inventors applied DATAS to dopaminergic neurons exposed to oxidative stress induced by the 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) toxin. This toxin can induce PD pathol. and symptoms in animal models and in human. DATAS is a patented gene profiling technol. (U.S. Pat. Number 6,251,590), which allows the systematic anal. of transcripts that are differentially spliced between two physiopathol. situations. Based on the identification of splicing alterations induced by MPTP exposure, several unprecedented pathways, receptors and enzymes were identified. Among the pathways identified was a signaling cascade involving the following mol. players: Rap guanine nucleotide exchange factor (GEF) 4, RhoB gene (Arhb), Rac1, p21/Cdc42/Rac1-activated kinase 1 (STE20 homolog, yeast) (PAK1).

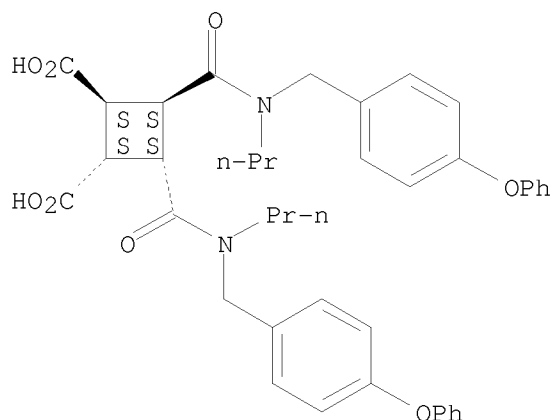
IT 169941-83-7, A 87049

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(FT inhibitor; compds. which inhibits protein prenylation e.g.  
geranylgeranyltransferase or farnesyltransferase inhibitors for  
treating parkinson's disease)

RN 169941-83-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



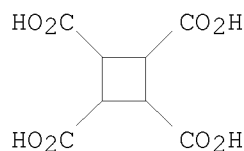
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 20 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:440351 CAPLUS

DOCUMENT NUMBER: 145:84357  
 TITLE: Environment-friendly lignin foamed material and its forming process  
 INVENTOR(S): Luo, Xuegang; Xu, Dong  
 PATENT ASSIGNEE(S): Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1766003	A	20060503	CN 2004-10040898	20041025
PRIORITY APPLN. INFO.:			CN 2004-10040898	20041025
AB The title lignin foamed material is prepared from (by weight) high-purity lignin 30-80, resin 0-60, grafting modifier 1-10, initiator 0-5, foaming agent 1-5, and lubricant 1-5 parts. The title preparation method comprises removing impurities to obtain a high-purity lignin with mol. weight of above 1000, purity of above 60%, and glass transition temperature of above 100°; mixing with other materials; melt kneading at 100-200° for 3-10 min; extruding at 110-210°; and foaming in a mold.				
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid RL: MOA (Modifier or additive use); USES (Uses) (grafting modifier; environmentally friendly lignin foamed material and its forming process)				
RN 53159-92-5 CAPLUS				
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)				

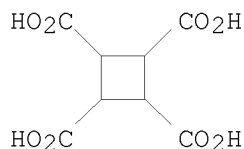


L4 ANSWER 21 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2006:440350 CAPLUS  
 DOCUMENT NUMBER: 145:84356  
 TITLE: Environment-friendly lignin film and its preparation method  
 INVENTOR(S): Luo, Xuegang; Xu, Dong  
 PATENT ASSIGNEE(S): Luo Xuegang, Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1766002	A	20060503	CN 2004-10040897	20041025
CN 100365069	C	20080130		
PRIORITY APPLN. INFO.:			CN 2004-10040897	20041025
AB The title lignin film is prepared from (by weight) high-purity lignin 30-80, resin 0-60, grafting modifier 1-10, initiator 0-5, plasticizer 2-10, antioxidant 0-1, and lubricant 1-5 parts. The title preparation method comprises removing impurities to obtain a high-purity lignin with mol. weight of above 1000, purity of above 60%, and glass transition temperature of above				

100°; mixing with other materials; melt kneading at 100-200°  
for 3-10 min; extruding at 110-210°, granulating, and blow molding.

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: MOA (Modifier or additive use); USES (Uses)  
(grafting modifier; environmentally friendly lignin film and its preparation  
method)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



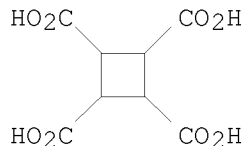
L4 ANSWER 22 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2006:440346 CAPLUS  
DOCUMENT NUMBER: 145:84109  
TITLE: Environment-friendly lignin-containing thermoplastic  
masterbatch and its preparation method  
INVENTOR(S): Luo, Xuegang; Xu, Dong  
PATENT ASSIGNEE(S): Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1766001	A	20060503	CN 2004-10040895	20041025

PRIORITY APPLN. INFO.: CN 2004-10040895 20041025

AB The title masterbatch comprises (by weight) high-purity lignin 10-80, resin 0-60, grafting modifier 1-10, initiator 0-5, plasticizer 2-10, antioxidant 0-1, and lubricant 1-5 parts. The title preparation method comprises removing impurities to obtain high-purity lignin with mol. weight of above 1000, purity of above 60%, and glass transition temperature of above 100°; mixing with other materials; melt kneading at 100-200° for 3-10 min; and extruding at 110-210°.

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: MOA (Modifier or additive use); USES (Uses)  
(grafting modifier; environmentally friendly lignin-containing  
thermoplastic masterbatch and its preparation method)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)

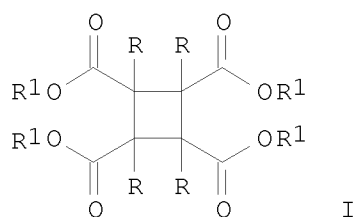


L4 ANSWER 23 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2006:388790 CAPLUS  
DOCUMENT NUMBER: 144:432788  
TITLE: Photochemical method for the preparation of

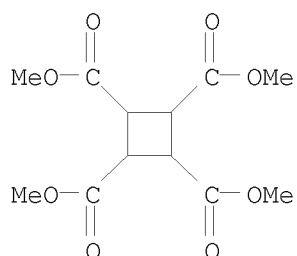
INVENTOR(S): cyclobutanetetracarboxylates from fumarates  
 PATENT ASSIGNEE(S): Lai, Ming-Chih; Chang, Chia-Wen; Ong, Chi-Wi  
 SOURCE: Eternal Chemical Co., Ltd., Taiwan  
 U.S. Pat. Appl. Publ., 3 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060089505	A1	20060427	US 2005-253798	20051019
TW 279403	B	20070421	TW 2004-93131887	20041020
CN 1765870	A	20060503	CN 2004-10086551	20041025
JP 2006117673	A	20060511	JP 2005-303996	20051019
US 20080033199	A1	20080207	US 2007-888703	20070802
US 7402693	B2	20080722		

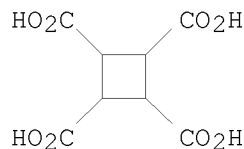
PRIORITY APPLN. INFO.: TW 2004-93131887 A 20041020  
 US 2005-253798 A2 20051019  
 OTHER SOURCE(S): CASREACT 144:432788; MARPAT 144:432788  
 GI



AB Cyclobutanetetracarboxylates (I; R = H, halogen; R1 = C1-4 alkyl; e.g., cyclobutanetetracarboxylic dianhydride) are prepared by the esterification of fumaric acids into difumarate esters (e.g., di-Me fumarate) which are then subjected to a photochem. cycloaddn. reaction (and the products then hydrolyzed into the tetracarboxylic acids and then converted into the dianhydrides).  
 IT 14495-41-1P 53159-92-5P,  
 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (in a photochem. method for the preparation of cyclobutanetetracarboxylates from fumarates)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)

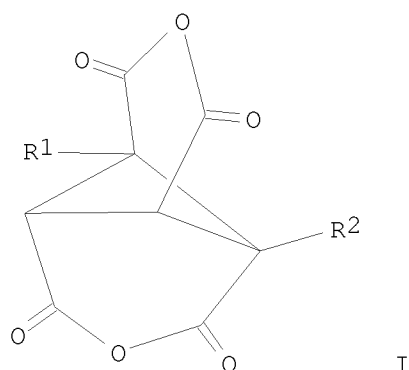


RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 24 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2006:381194 CAPLUS  
 DOCUMENT NUMBER: 144:432677  
 TITLE: Cage-shaped cyclobutanoic dianhydrides and process for production thereof  
 INVENTOR(S): Suzuki, Hideo; Tamura, Takayuki  
 PATENT ASSIGNEE(S): Nissan Chemical Industries, Ltd., Japan  
 SOURCE: PCT Int. Appl., 56 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006043519	A1	20060427	WO 2005-JP19071	20051018
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
EP 1813592	A1	20070801	EP 2005-795540	20051018
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR			
CN 101044108	A	20070926	CN 2005-80036041	20051018
KR 2007067132	A	20070627	KR 2007-708265	20070412
PRIORITY APPLN. INFO.:			JP 2004-305384	A 20041020
			JP 2004-319740	A 20041102
			JP 2005-85162	A 20050324
			WO 2005-JP19071	W 20051018
OTHER SOURCE(S):	CASREACT 144:432677; MARPAT 144:432677			
GI				



AB The title compds. I [R1, R2 = hydrogen, halogeno, C1 - C10 alkyl, etc.] are prepared by reacting trans,trans,trans-1,2,3,4-cyclobutanetetracarboxylic acid derivs. (II) with a dehydrating agent. II are prepared by reaction of a 1,2,3,4-cyclobutanetetracarboxylic acid-1,2:3,4-dianhydride derivs. with an alc. in the presence of an acid catalyst, followed by isomerization of cis,trans,cis-1,2,3,4-cyclobutanetetracarboxylic acid tetraesters in the presence of a base catalyst, and hydrolysis of trans,trans,trans-1,2,3,4-cyclobutanetetracarboxylic acid tetraesters. The title compds. are monomers for polyimides. Thus, reaction of 1,2,3,4-cyclobutanetetracarboxylic acid-1,2:3,4-dianhydride with methanol in the presence of sulfuric acid, followed by isomerization of the product in the presence of potassium tert-butoxide, hydrolysis of the resulting tetraester, and treatment of the resulting tetracarboxylic acid with acetic anhydride, gave 1,2,3,4-cyclobutanetetracarboxylic acid-1,3:2,4-dianhydride.

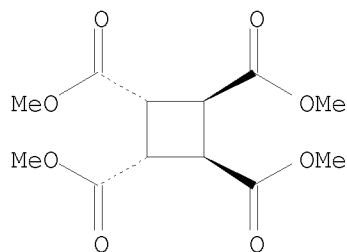
IT 1032-95-7P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of 1,2,3,4-cyclobutanetetracarboxylic acid-1,3:2,4-dianhydride derivs. by reaction of 1,2,3,4-cyclobutanetetracarboxylic-1,2:3,4-dianhydride derivs. with alcs., followed by isomerization, hydrolysis, and dehydration)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



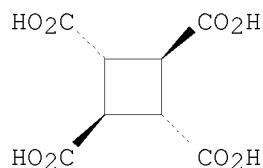
IT 720-21-8P 3999-67-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of 1,2,3,4-cyclobutanetetracarboxylic acid-1,3:2,4-dianhydride derivs. by reaction of 1,2,3,4-cyclobutanetetracarboxylic-1,2:3,4-dianhydride derivs. with alcs., followed by isomerization, hydrolysis, and dehydration)

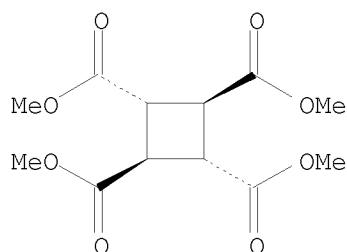
RN 720-21-8 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 3999-67-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 25 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2005:1245773 CAPLUS  
DOCUMENT NUMBER: 144:51104  
TITLE: Reversing the code of a template-directed solid-state synthesis: a bipyridine template that directs a single-crystal-to-single-crystal [2 + 2] photodimerisation of a dicarboxylic acid  
AUTHOR(S): Friscic, Tomislav; MacGillivray, Leonard R.  
CORPORATE SOURCE: Chemistry Department, University of Iowa, Iowa City, IA, USA  
SOURCE: Chemical Communications (Cambridge, United Kingdom) (2005), (46), 5748-5750  
CODEN: CHCOFS; ISSN: 1359-7345  
PUBLISHER: Royal Society of Chemistry  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 144:51104  
AB A linear template in the form of a bipyridine has been developed and is shown to direct a single-crystal-to-single-crystal [2 + 2] photodimerization of a dicarboxylic acid.  
IT 871564-12-4P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (crystallog.; reversing code of template-directed solid-state synthesis, bipyridine template that directs single-crystal-to-single-crystal [2 + 2] photodimerization of dicarboxylic acid)  
RN 871564-12-4 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-, compd. with

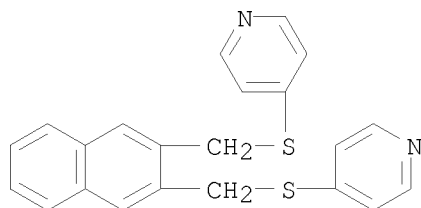


4,4'-[2,3-naphthalenediylbis(methylenethio)]bis[pyridine] (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 871564-10-2

CMF C22 H18 N2 S2

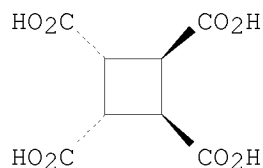


CM 2

CRN 38841-00-8

CMF C8 H8 O8

Relative stereochemistry.



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 26 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2005:1028096 CAPLUS  
DOCUMENT NUMBER: 143:297915  
TITLE: Platinum carboxylate anticancer compounds  
INVENTOR(S): Lal, Manjari  
PATENT ASSIGNEE(S): Sonus Pharmaceuticals, Inc., USA  
SOURCE: U.S. Pat. Appl. Publ., 14 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050209321	A1	20050922	US 2005-80348	20050314
US 7129368	B2	20061031		
CA 2560059	A1	20050929	CA 2005-2560059	20050314
WO 2005090372	A2	20050929	WO 2005-US8571	20050314
WO 2005090372	A3	20060330		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

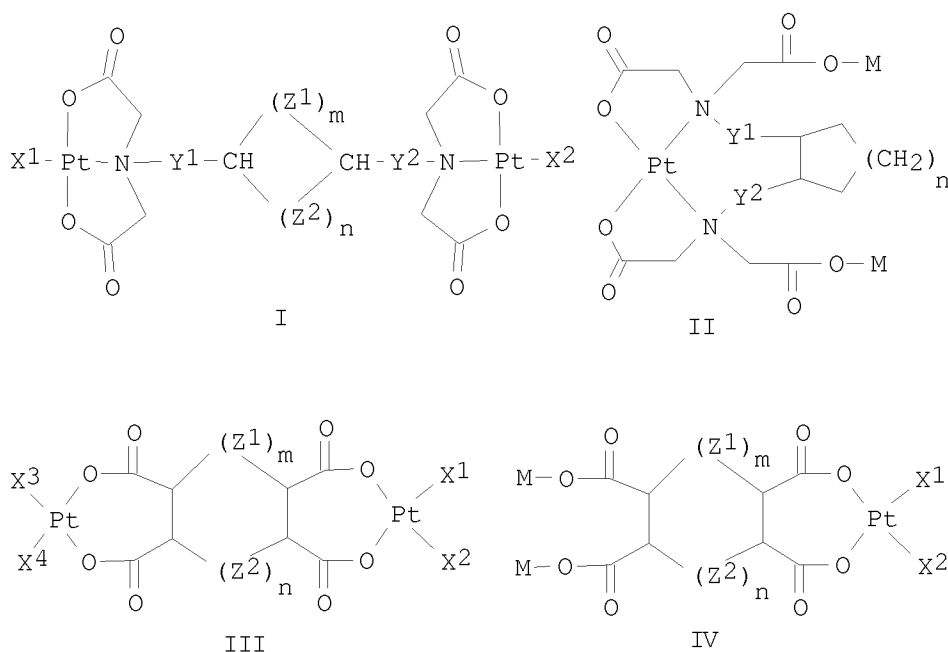
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
 MR, NE, SN, TD, TG

US 20070129431 A1 20070607 US 2006-550546 20061018  
 US 7268245 B2 20070911

PRIORITY APPLN. INFO.:

US 2004-553108P P 20040315  
 US 2005-659932P P 20050310  
 US 2005-80348 A2 20050314  
 WO 2005-US8571 W 20050314  
 US 2005-753915P P 20051222

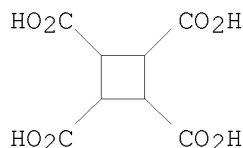
OTHER SOURCE(S): CASREACT 143:297915; MARPAT 143:297915  
 GI



AB The invention relates to platinum carboxylate anticancer compds., pharmaceutical compns. that include the platinum carboxylate compds., and methods for treating cellular proliferative diseases by administering the platinum carboxylate compds. Included are diplatinum C4-7 (cyclo)alkane diaminetetraacetate complexes I [X1, X2 are independently NH3, amino, nitro, C1-6 alkoxy, OH, Cl, Br, I; Y1, Y2 are independently a direct bond, C1-6 (un)branched alkyl; Z1, Z2 are C(R1)R2 and C(R3)R4, resp., where R1-4 are H or C1-6 (un)branched alkyl; m and n = 0-5 with restrictions]. Also included are monoplatinum C4-7 (cyclo)alkanetetracarboxylate complexes II [M = H or metal ion; Y1, Y2 are both direct bonds or CH2; n = 0-3], diplatinum C4-7 (cyclo)alkanetetracarboxylate complexes III [X1-X4 are independently NH3, amino, nitro, C1-6 alkoxy, OH, Cl, Br, I; Z1, Z2 are as above in I; m and n = 0-3 with restrictions], and monoplatinum C4-7 (cyclo)alkanetetracarboxylate complexes IV [M = H or metal ion; X1, X2 are independently NH3, amino, nitro, C1-6 alkoxy, OH, Cl, Br, I; Z1, Z2 are as above in I; m and n = 0-3 with restrictions]. Pharmaceutical compns. comprising compds. I and a pharmaceutical carrier with/without a second anticancer agent are claimed. A method is claimed for treating a cellular proliferative disease (including hematol. and nonhematol. cancers) with

compds. I. Specific mono- and diplatinum complexes of the invention are prepared and tested for their cytotoxicity against various cell lines: colorectal carcinoma (HCT-116, HT-29), non-small cell lung cancer (NCI-H460), small cell lung cancer (NCI-H69, NCI-H69/AR), ovarian cancer (A2780, A2780/DPpT). Cyclohexane-trans-1,2-diaminotetraacetate diplatinum and monoplatinum complexes exhibit potency comparable to or greater than cisplatin in six of the cell lines.

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for preparation of mono- and diplatinum carboxylate complexes)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 27 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:599495 CAPLUS

DOCUMENT NUMBER: 143:218485

TITLE: Relationship between surface order and surface azimuthal anchoring strength on polyimide with linearly polarized ultraviolet light exposure

AUTHOR(S): Mitsumoto, Takashi; Oka, Shinichirou; Kimura, Munehiro; Akahane, Tadashi

CORPORATE SOURCE: Department of Electrical Engineering, Faculty of Engineering, Nagaoka University of Technology, Niigata, 940-2188, Japan

SOURCE: Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(6A), 4062-4066  
 CODEN: JAPNDE

PUBLISHER: Japan Society of Applied Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The liquid crystal (LC) mol. order near the polyimide surface with linearly polarized UV (LPUV) light exposure is re-examined by the improved torque balance method. The surface azimuthal anchoring strength measured by the improved torque balance method is larger than that measured by the conventional torque balance method and is considered to be significantly affected by the phase transition behavior. On the basis of this result, it can be argued that the correlation between the LPUV light dosage and the surface azimuthal anchoring strength should be improved in considering of the surface order mechanism. The absolute surface azimuthal anchoring strength is investigated with respect to the phase transition characteristics. Photoalignment revealed that a relatively strong surface azimuthal anchoring strength may be obtained. Furthermore, the effects of photoalignment and rubbing of different alignment processes were examined

IT 479207-73-3, Cyclobutanetetracarboxylic acid-2,2-bis(4-aminophenoxyphenyl)propane copolymer

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(relationship between surface order and surface azimuthal anchoring strength on polyimide with linearly polarized UV light exposure)

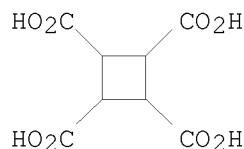
RN 479207-73-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with  
4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (CA  
INDEX NAME)

CM 1

CRN 53159-92-5

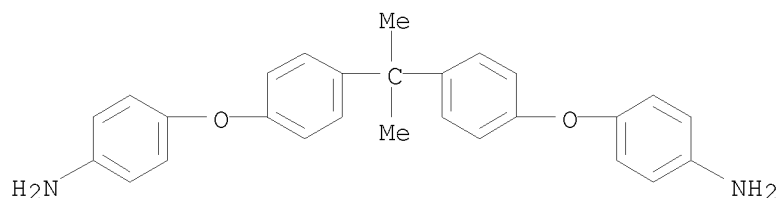
CMF C8 H8 O8



CM 2

CRN 13080-86-9

CMF C27 H26 N2 O2



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 28 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:232606 CAPLUS

DOCUMENT NUMBER: 142:309902

TITLE: The use of fumaric acid derivatives for treating  
cardiac insufficiency, and asthma

INVENTOR(S): Joshi, Rajendra Kumar; Strebel, Hans-Peter; Zaugg,  
Christian; Tamm, Michael

PATENT ASSIGNEE(S): Fumapharm A.-G., Switz.

SOURCE: PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005023241	A1	20050317	WO 2004-EP9835	20040903
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,			

SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
SN, TD, TG

DE 10360869	A1	20050407	DE 2003-10360869	20031223
AU 2004269903	A1	20050317	AU 2004-269903	20040903
CA 2526586	A1	20050317	CA 2004-2526586	20040903
EP 1663197	A1	20060607	EP 2004-764790	20040903
EP 1663197	B1	20071205		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
BR 2004010805	A	20060627	BR 2004-10805	20040903
CN 1829505	A	20060906	CN 2004-80021724	20040903
AT 380027	T	20071215	AT 2004-764790	20040903
RU 2313339	C2	20071227	RU 2005-141547	20040903
EP 1913942	A2	20080423	EP 2007-121903	20040903
EP 1913942	A3	20080521		
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, HR, LT, LV, MK				
ES 2297461	T3	20080501	ES 2004-764790	20040903
JP 2008529959	T	20080807	JP 2006-515290	20040903
MX 2006PA02657	A	20060605	MX 2006-PA2657	20060308
US 20070027076	A1	20070201	US 2006-571241	20060309
NO 2006001340	A	20060324	NO 2006-1340	20060324
IN 2006KN00784	A	20080926	IN 2006-KN784	20060331
PRIORITY APPLN. INFO.:			DE 2003-10341530	A 20030909
			DE 2003-10360869	A 20031223
			EP 2004-764790	A3 20040903
			WO 2004-EP9835	W 20040903

OTHER SOURCE(S): MARPAT 142:309902

AB According to a first aspect the invention relates to the use of fumaric acid derivs. selected from the group consisting of dialkyl fumarates, monoalkyl hydrogen fumarates, fumaric acid monoalkyl ester salts, fumaric acid monoamides, monoamido fumaric acid salts, fumaric acid diamides, monoalkyl monoamido fumarates, carbocyclic and oxacarbo-cyclic oligomers of these compds. and mixts. thereof for preparing a drug for the treatment or prevention of cardiac insufficiency, in particular left ventricular insufficiency, myocardial infarction and angina pectoris. According to a second aspect the invention relates to the use of fumaric acid derivs., selected from the group consisting of dialkyl fumarates, monoalkyl hydrogen fumarates, fumaric acid monoalkyl ester salts, fumaric acid monoamido fumaric acid salts, fumaric acid diamides, monoalkyl monoamido fumarates, carbocyclic and oxacarbo-cyclic oligomers of these compds. and mixts. thereof for preparing a drug for the treatment of asthma and chronic obstructive pulmonary diseases, especially asthma caused by allergies, infections, analgesics, job conditions or phys. effort, mixed forms of asthma, or asthma cardiale.

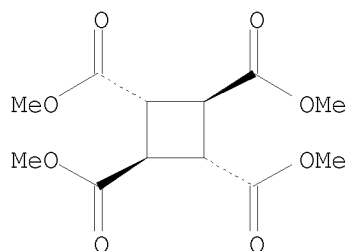
IT 3999-67-5

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(use of fumaric acid derivs. for treating cardiac failure, and asthma)

RN 3999-67-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 29 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:145441 CAPLUS

DOCUMENT NUMBER: 142:398308

TITLE: Influence of configuration of carboxylic acid capping ligands on the salt-induced aggregation of gold clusters

AUTHOR(S): Li, Di; Huang, Yunjie; Li, Jinghong

CORPORATE SOURCE: State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China

SOURCE: Journal of Colloid and Interface Science (2005), 283(2), 440-445

CODEN: JCISA5; ISSN: 0021-9797

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

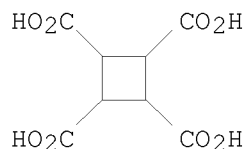
LANGUAGE: English

AB Oxalic acid (Ox) and 1,2,3,4-cyclobutanetetracarboxylic acid (CBTCA) were employed as capping ligands in the preparation of Au colloids. FTIR indicated that Ox adopted a linear configuration through one oxygen atom and one Au atom, while CBTCA adopted a bridge configuration through 2 oxygen atoms and 2 Au atoms. Ox-Au colloids exhibited aggregation upon addition of NaClO<sub>4</sub>, while they remained as isolated particles upon NaCl. For CBTCA-Au colloids, not NaClO<sub>4</sub> but NaCl resulted in aggregation. The reversed results were considered to have been influenced by the different configurations of Ox and CBTCA, which were combined results of the Lewis basicity and steric hindrance of the added ions.

IT 53159-92-5D, 1,2,3,4-Cyclobutanetetracarboxylic acid, gold-bound  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)  
(influence of configuration of carboxylic acid capping ligands on salt-induced aggregation of gold clusters)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 30 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:912866 CAPLUS

DOCUMENT NUMBER: 142:68028

TITLE: Assembly of a photoreactive coordination polymer containing rectangular grids

AUTHOR(S): Michaelides, Adonis; Skoulika, Stavroula; Siskos, Michael G.

CORPORATE SOURCE: Department of Chemistry, University of Ioannina, Ioannina, 45110, Greece

SOURCE: Chemical Communications (Cambridge, United Kingdom) (2004), (21), 2418-2419

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors describe the synthesis, crystal structure and solid state reactivity of Cd fumarate dihydrate, which is made up of planar H-bonded metal-organic layers and undergoes, upon irradiation, a topochem. [2 + 2] cycloaddn. reaction.

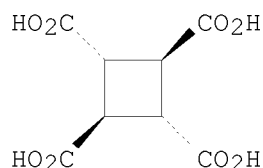
IT 720-21-8P, trans,trans,trans-1,2,3,4-Cyclobutanetetracarboxylic acid

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation by photochem. [2 + 2] cycloaddn. reaction of cadmium fumarate polymeric complex)

RN 720-21-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 31 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:783746 CAPLUS

DOCUMENT NUMBER: 141:420031

TITLE: Incorporating Protein Flexibility in Structure-Based Drug Discovery: Using HIV-1 Protease as a Test Case

AUTHOR(S): Meagher, Kristin L.; Carlson, Heather A.

CORPORATE SOURCE: College of Pharmacy, Department of Medicinal Chemistry, University of Michigan, Ann Arbor, MI, 48109-1065, USA

SOURCE: Journal of the American Chemical Society (2004), 126(41), 13276-13281

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

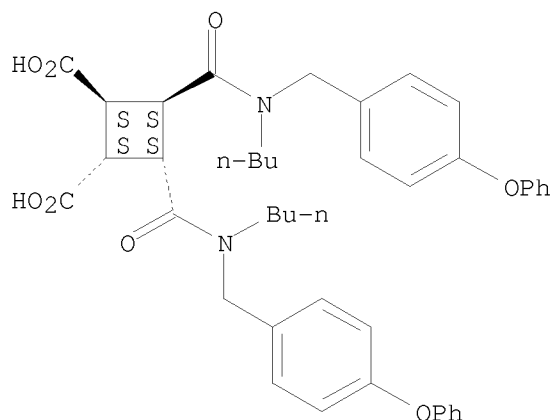
AB We have developed a receptor-based pharmacophore method which utilizes a collection of protein structures to account for inherent protein flexibility in structure-based drug design. Several procedures were systematically evaluated to derive the most general protocol for using multiple protein structures. Most notably, incorporating more protein flexibility improved the performance of the method. The pharmacophore models successfully discriminate known inhibitors from drug-like non-inhibitors. Furthermore, the models correctly identify the bound conformations of some ligands. We used unliganded HIV-1 protease to develop and validate this method. Drug design is always initiated with a protein-ligand structure, and such success with unbound protein structures is remarkable - particularly in the case of HIV-1 protease, which has a large conformational change upon binding. This technique holds the promise of successful computer-based drug design before bound crystal structures are even discovered, which can mean a jump-start of 1-3 yr in tackling some medically relevant systems with computational methods.

IT 169941-92-8

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(incorporating protein flexibility in structure-based drug discovery using HIV-1 protease as a test case)

RN 169941-92-8 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 32 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:650313 CAPLUS

DOCUMENT NUMBER: 141:253217

TITLE: Identification and quantification of aerosol polar oxygenated compounds bearing carboxylic or hydroxyl groups. 1. Method development

AUTHOR(S): Jaoui, M.; Kleindienst, T. E.; Lewandowski, M.; Edney, E. O.

CORPORATE SOURCE: ManTech Environmental Technology Inc., Research Triangle Park, NC, 27709, USA

SOURCE: Analytical Chemistry (2004), 76(16), 4765-4778  
CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

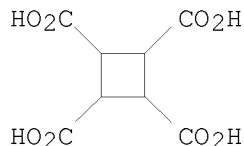
LANGUAGE: English

AB A new anal. technique was developed for the identification and quantification of multifunctional compds. containing simultaneously at least one hydroxyl or one carboxylic group, or both. This technique is based on derivatizing 1st the carboxylic group(s) of the multifunctional compound using an alc. (e.g., methanol, 1-butanol) in the presence of a relatively strong Lewis acid (BF<sub>3</sub>) as a catalyst. This esterification reaction quickly and quant. converts carboxylic acids to their ester forms. The 2nd step is based on silylation of the ester compds. using bis(trimethylsilyl) trifluoroacetamide (BSTFA) as the derivatizing agent. For compds. bearing ketone groups in addition to carboxylic and hydroxyl groups, a 3rd step was used based on PFBHA derivatization of the carbonyls. Different parameters including temperature, reaction time, and effect due to artifacts were optimized. A GC/MS in EI and in methane-CI mode was used for the anal. of these compds. The new approach was tested on a number of multifunctional compds. The interpretation of their EI (70 eV) and CI mass spectra shows that critical information is gained leading to unambiguous identification of unknown compds. For example, when derivatized only with BF<sub>3</sub>-methanol, their mass spectra comprise primary ions at m/z M<sup>•+</sup> + 1, M<sup>•+</sup> + 29, and M<sup>•+</sup> - 31 for compds. bearing only carboxylic groups and M<sup>•+</sup> + 1, M<sup>•+</sup> + 29, M<sup>•+</sup> - 31, and M<sup>+</sup> - 17 for those bearing hydroxyl and carboxylic groups. However, when a 2nd derivatization (BSTFA) was used, compds. bearing



hydroxyl and carboxylic groups simultaneously show, in addition to the ions observed before, ions at  $m/z$   $M\bullet+ + 73$ ,  $M\bullet+ - 15$ ,  $M\bullet+ - 59$ ,  $M\bullet+ - 75$ ,  $M\bullet+ - 89$ , and 73. To the best of the authors' knowledge, this technique describes systematically for the 1st time a method for identifying multifunctional oxygenated compds. containing simultaneously one or more hydroxyl and carboxylic acid groups.

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: ANT (Analyte); ANST (Analytical study)  
(identification and quantification of aerosol polar oxygenated compds. bearing carboxylic or hydroxyl groups)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 33 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:382447 CAPLUS

DOCUMENT NUMBER: 141:387677

TITLE: The first cyclobutane-1,2,3,4-tetracarboxylate containing metal coordination polymer with three-dimensional framework

AUTHOR(S): Luo, Junhua; Jiang, Feilong; Wang, Ruihu; Hong, Maochun

CORPORATE SOURCE: State Key Laboratory of Structural Chemistry, Fujian Institute of Research on the Structure of Matter, Fujian, Fuzhou, 350002, Peop. Rep. China

SOURCE: Inorganic Chemistry Communications (2004), 7(5), 638-642

CODEN: ICCOFP; ISSN: 1387-7003

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:387677

AB The hydrothermal reaction of cyclobutane-1,2,3,4-tetracarboxylic acid (H4CBTC) with  $\text{Cd}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$  yields the first CBTC containing metal coordination polymer with three-dimensional framework  $[\text{Cd}_2(\text{CBTC})(\text{H}_2\text{O})_2]_n$ , which was characterized by single-crystal x-ray diffraction anal., IR spectroscopy and TGA.

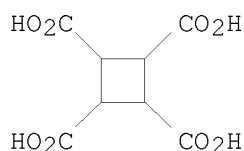
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant for hydrothermal preparation of cadmium cyclobutanetetracarboxylate 3D coordination polymer)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS

L4 ANSWER 34 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2004:219269 CAPLUS  
 DOCUMENT NUMBER: 140:278510  
 TITLE: Liquid crystal aligning agent for liquid crystal alignment film for liquid crystal displays  
 INVENTOR(S): Narita, Noriaki; Ono, Hiroshi  
 PATENT ASSIGNEE(S): Chisso Corp., Japan; Chisso Petrochemical Corporation  
 SOURCE: Jpn. Kokai Tokkyo Koho, 49 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004086184	A	20040318	JP 2003-180971	20030625
TW 254735	B	20060511	TW 2003-92112898	20030513
KR 2004002630	A	20040107	KR 2003-39457	20030618
PRIORITY APPLN. INFO.:			JP 2002-183860	A 20020625

AB The title agent contains polyamic acid, wherein the polyamic acid is prepared from diamine without long branched chain and 65-85 mol % of tetracarboxylic acid dianhydride, which consists of 15-35 mol % of aromatic tetracarboxylic acid dianhydride and 85-65 mol % of  $\geq 2$  kinds of aliphatic or alicyclic tetracarboxylic acid dianhydride. The liquid crystal-aligning agent provides appropriate tilt angle and shows good electronic properties.

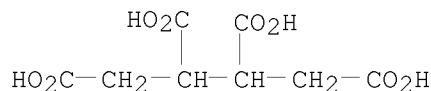
IT 672311-14-7P 672311-27-2P 672311-29-4P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamic acid in liquid crystal aligning agent)

RN 672311-14-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, methyl ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 1,2,3,4-butanetetracarboxylic acid, 4,4'-methylenebis[benzenamine] and 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

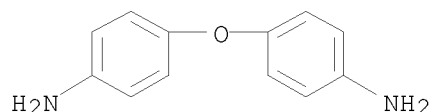
CM 1

CRN 1703-58-8  
 CMF C8 H10 O8



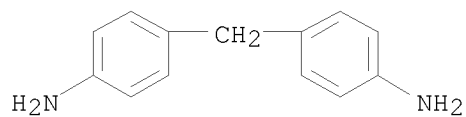
CM 2

CRN 101-80-4  
 CMF C12 H12 N2 O



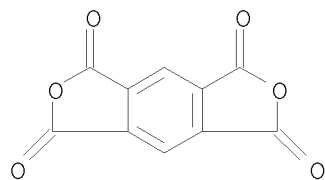
CM 3

CRN 101-77-9  
CMF C13 H14 N2



CM 4

CRN 89-32-7  
CMF C10 H2 O6

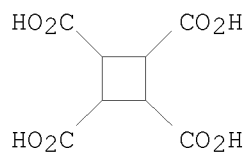


CM 5

CRN 672311-13-6  
CMF C8 H8 O8 . x C H4 O

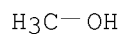
CM 6

CRN 53159-92-5  
CMF C8 H8 O8



CM 7

CRN 67-56-1  
CMF C H4 O



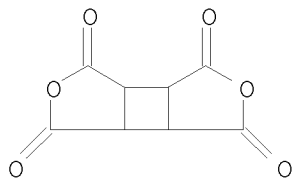
RN 672311-27-2 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, methyl ester, polymer with  
1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,  
1,2,3,4-butanetetracarboxylic acid,  
hexahydro-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,  
4,4'-methylenebis[benzenamine] and

tetrahydrocyclobuta[1,2-c:3,4-c']difurantetrone (9CI) (CA INDEX NAME)

CM 1

CRN 4415-87-6

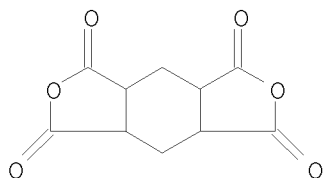
CMF C8 H4 O6



CM 2

CRN 2754-41-8

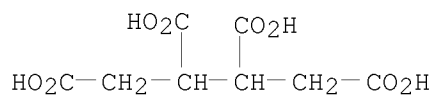
CMF C10 H8 O6



CM 3

CRN 1703-58-8

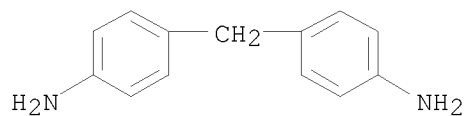
CMF C8 H10 O8



CM 4

CRN 101-77-9

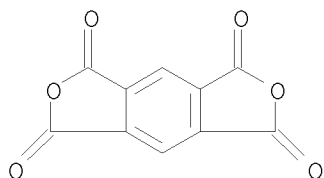
CMF C13 H14 N2



CM 5

CRN 89-32-7

CMF C10 H2 O6



CM 6

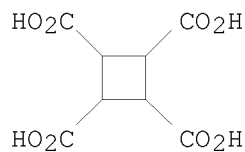
CRN 672311-13-6

CMF C8 H8 O8 . x C H4 O

CM 7

CRN 53159-92-5

CMF C8 H8 O8



CM 8

CRN 67-56-1

CMF C H4 O

H<sub>3</sub>C—OH

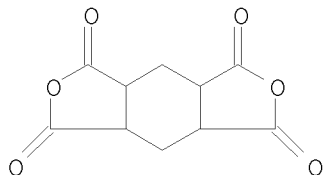
RN 672311-29-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, methyl ester, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 4,4'-(1,2-ethanediyl)bis[benzenamine], hexahydro-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and 4,4'-methylenebis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 2754-41-8

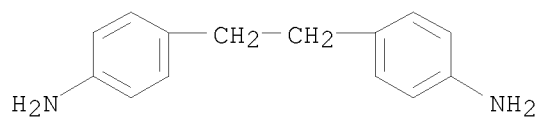
CMF C10 H8 O6



CM 2

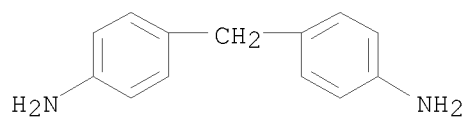
CRN 621-95-4

CMF C14 H16 N2



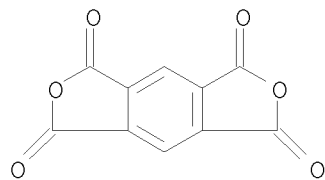
CM 3

CRN 101-77-9  
CMF C13 H14 N2



CM 4

CRN 89-32-7  
CMF C10 H2 O6

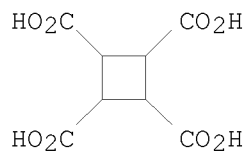


CM 5

CRN 672311-13-6  
CMF C8 H8 O8 . x C H4 O

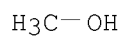
CM 6

CRN 53159-92-5  
CMF C8 H8 O8



CM 7

CRN 67-56-1  
CMF C H4 O



L4 ANSWER 35 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:837151 CAPLUS  
DOCUMENT NUMBER: 139:328252  
TITLE: Carbocyclic and oxacarbo-cyclic fumaric acid oligomers  
as pharmaceuticals  
INVENTOR(S): Joshi, Rajendra Kumar; Strebel, Hans-Peter  
PATENT ASSIGNEE(S): Fumapharm A.-G., Switz.  
SOURCE: PCT Int. Appl., 28 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003087174	A2	20031023	WO 2003-EP3498	20030403
WO 2003087174	A3	20040108		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10217314	A1	20031113	DE 2002-10217314	20020418
CA 2476298	A1	20031023	CA 2003-2476298	20030403
AU 2003216916	A1	20031027	AU 2003-216916	20030403
EP 1494992	A2	20050112	EP 2003-712131	20030403
EP 1494992	B1	20080528		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
JP 2005519982	T	20050707	JP 2003-584129	20030403
EP 1671965	A2	20060621	EP 2006-6969	20030403
EP 1671965	A3	20060726		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
NZ 534620	A	20070831	NZ 2003-534620	20030403
AT 396966	T	20080615	AT 2003-712131	20030403
US 20050148664	A1	20050707	US 2004-511564	20041015
PRIORITY APPLN. INFO.:			DE 2002-10217314	A 20020418
			EP 2003-712131	A3 20030403
			WO 2003-EP3498	W 20030403

OTHER SOURCE(S): MARPAT 139:328252

AB The title oligomers, with good hydrolysis resistance and useful in pharmaceuticals, are cyclic oligomers of fumaric acid or derivs. of specified structure. A homogenized (sieve 800) mixture of 6.0 kg r-1, t-2, c-3, t-4-tetrakis(methoxycarbonyl)cyclobutane and 3.0 kg r-1, t-2, c-3, t-4, c-5, t-6-hexa(methoxycarbonyl)cyclohexane was mixed (9.0 kg) with a starch derivative (STA-RX 1500) 18.0, microcryst. cellulose (Avicel PH 101) 0.30, poly(vinylpyrrolidone) (Kollidon 120) 0.75, Primogel 4.00, and colloidal SiO<sub>2</sub> (Aerosil) 0.25 kg was powdered to sieve 200, mixed with 2% aqueous Kollidon binder, dried, mixed with 0.50 kg Mg stearate and 1.50 kg talc, pressed to tablets, coated (for resistance to gastric juices) with a solution of 2.250 kg hydroxypropyl Me cellulose phthalate (Parmacoat HP 50) in acetone-EtOH-H<sub>2</sub>O, dried, and finish-coated.

IT 3999-67-5

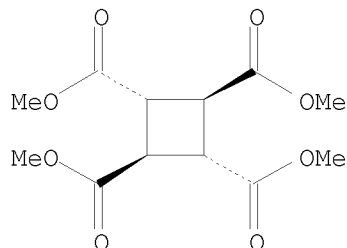
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(carbocyclic and oxacarboyclic fumaric acid oligomers as  
pharmaceuticals)

RN 3999-67-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 36 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:751270 CAPLUS

DOCUMENT NUMBER: 139:252461

TITLE: Heat-developable dry silver photographic materials  
having long shelf life and imaging thereon

INVENTOR(S): Kimura, Sok Man Ho

PATENT ASSIGNEE(S): Konica Co., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 36 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003270756	A	20030925	JP 2002-69996	20020314
PRIORITY APPLN. INFO.:			JP 2002-69996	20020314
OTHER SOURCE(S):	MARPAT	139:252461		

AB The materials of improved reciprocity law failure characteristics contain Ag halide emulsions containing nonphotosensitive Ag aliphatic carboxylates, Ag ion reductants, and polycarboxy compds. or their anhydrides that form complexes with unstable Ag ion. The polycarboxy compds. may be R(CO<sub>2</sub>M)<sub>n0</sub> (R = cyclic group; M = H, metal, quaternary ammonium or phosphonium group; n<sub>0</sub> = 2-20). The materials are imagewise exposed to 600-900-nm IR laser beams (and developed by  $\leq 200^\circ$  heat treatment within 5-15 s) to form low-fog images of high D<sub>max</sub>.

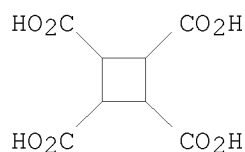
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(complexing agents; heat-developable dry silver photog. films containing Ag ion stabilizers and showing long shelf life)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)





L4 ANSWER 37 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:689997 CAPLUS  
DOCUMENT NUMBER: 139:364592  
TITLE: Coerced photodimerization reaction in the solid state  
through amine salt formation  
AUTHOR(S): Ito, Yoshikatsu; Kitada, Tetsuya; Horiguchi, Masahiro  
CORPORATE SOURCE: Graduate School of Engineering, Department of  
Synthetic Chemistry and Biological Chemistry, Kyoto  
University, Katsura, Kyoto, 6158510, Japan  
SOURCE: Tetrahedron (2003), 59(37), 7323-7329  
CODEN: TETRAB; ISSN: 0040-4020  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 139:364592

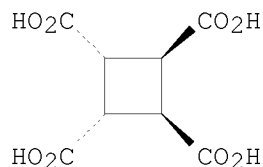
AB Photodimerization of fumaric or several  $\gamma$ -form trans-cinnamic acids  
proceeded successfully in the solid state through amine salt formation  
with ammonia or some aromatic heterocyclic amines (especially, imidazole). It  
appears that this success is due to a small size or a planar structure of  
the amine. A layered or a channel-type clathrate crystal structure was  
revealed, resp.

IT 38841-00-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(coerced photodimerization reaction in solid state through amine salt  
formation)

RN 38841-00-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 38 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:434295 CAPLUS  
DOCUMENT NUMBER: 139:12366  
TITLE: Flexible and absorbent alginate wound dressing  
INVENTOR(S): Edwards, Judson V.; Connick, William J., Jr.; Jackson,  
Mark A.  
PATENT ASSIGNEE(S): United States of America, Secretary of Agriculture,  
USA  
SOURCE: PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003045293	A1	20030605	WO 2002-US37440	20021121
WO 2003045293	B1	20030821		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM,  
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,  
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL,  
PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,  
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 20030105419 A1 20030605 US 2001-989889 20011121

US 6809231 B2 20041026

AU 2002365398 A1 20030610 AU 2002-365398 20021121

PRIORITY APPLN. INFO.: US 2001-989889 A 20011121

WO 2002-US37440 W 20021121

AB Disclosed is a wound dressing containing cellulose-containing material and alginate, wherein the alginate is crosslinked through a polycarboxylic acid ester bond to the cellulose of the cellulose-containing material. A method for preparing a wound dressing is disclosed wherein alginate is crosslinked to cellulose through a polycarboxylic acid ester bond, comprising introducing cellulose-containing material into an aqueous solution wherein

the aqueous solution contains water, alginate, a crosslinker, optionally an acid

catalyst, and optionally polyethylene glycol to form cellulose-containing material wherein alginate is crosslinked to cellulose through a polycarboxylic acid ester bond, drying, and curing. For example, a cotton gauze was immersed in an aqueous solution containing Na alginate, citric acid,

Na hypophosphite, and polyethylene glycol. The samples were dried and cured to be used as a wound dressing.

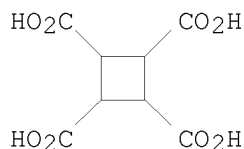
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(crosslinker; manufacture of wound dressing by crosslinking alginate with cellulosic materials)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 39 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:196443 CAPLUS

DOCUMENT NUMBER: 138:221974

TITLE: Cyclobutanetetracarboxylic acid (meth)acrylate derivatives and their manufacture

INVENTOR(S): Suzuki, Hideo

PATENT ASSIGNEE(S): Nissan Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

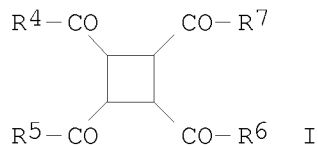
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003073338	A	20030312	JP 2001-261039	20010830
PRIORITY APPLN. INFO.:			JP 2001-261039	20010830
OTHER SOURCE(S):	MARPAT	138:221974		
GI				

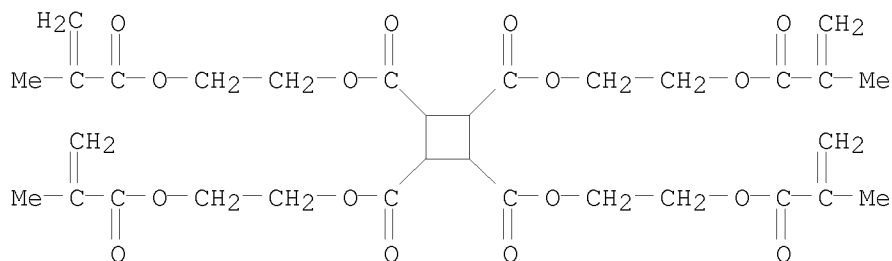


AB Title compds. I [R4-R7 = OH, (OC2H4)nO2CCR1:CR2R3; R4 = R5 = R6 = R7 ≠ OH; R1 = H, C1-4 alkyl; R2, R3 = H, C1-10 alkyl; n = 1-3] are manufactured by reaction of cyclobutanetetracarboxylic acid dianhydride (II) with R1R3C:CR1CO2(C2H4O)nH (R1-R3, n = same as I). I are useful as radically polymerizable or UV-curable monomers for transparent acrylic polymers (no data). Thus, II was esterified with 2-methacryloylethanol in p-methoxyphenol at 100° for 18 h to give 21.2% I (R4-R7 = OC2H4O2CCMe:CH2).

IT 500711-77-3P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manufacture of cyclobutanetetracarboxylic acid (meth)acrylate derivs.)

RN 500711-77-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetrakis[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl] ester (CA INDEX NAME)



L4 ANSWER 40 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:40226 CAPLUS

DOCUMENT NUMBER: 138:115145

TITLE: Polyamide alignment film for liquid crystal display

INVENTOR(S): Katsumura, Nobuhito; Kitsukawa, Haruhiko; Inoue, Takashi; Yamada, Masahiro; Koike, Yasuo; Fukuoka, Nobuhiko; Terao, Hiromu

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan

SOURCE: Eur. Pat. Appl., 27 pp.  
 CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1276003	A1	20030115	EP 2001-121854	20010911

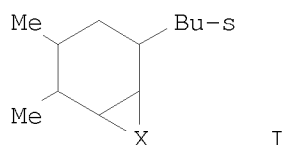
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2003026918	A	20030129	JP 2001-212973	20010713
US 20030021914	A1	20030130	US 2001-949639	20010912
US 6720040	B2	20040413		
US 20030108686	A1	20030612	US 2002-255713	20020927
US 6753048	B2	20040622		

PRIORITY APPLN. INFO.:

JP 2001-212973	A	20010713
US 2001-949639	A3	20010912

GI



AB Disclosed is a material for a liquid-crystal alignment film which comprises as a first polyamide a C3-10-alkyl ester of a polyamic acid whose acid anhydride residual group is cyclobutane, cyclopentane, or cyclohexane derivs. and as further disclosed in the claims, and as a second polyamide a C3-10-alkyl ester of a polyamic acid whose acid anhydride residual group is of formula I (X = hydrocarbon group). The use of this material provides a liquid-crystal alignment film having a high pre-tilt angle of mols. to the substrate, and having superiority in respect of elec. properties such as voltage holding ratio and residual DC voltage, adherence to substrates, printability, and step-covering properties.

IT 485801-31-8P 485801-34-1P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(polyamide alignment film for liquid crystal display)

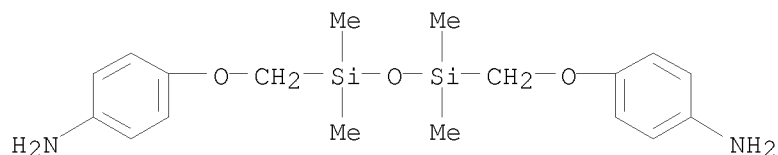
RN 485801-31-8 CAPLUS

CN 1,2,4,5-Benzenetetracarboxylic acid, dipropyl ester, polymer with dipropyl dihydrogen 1,2,3,4-cyclobutanetetracarboxylate, 3,3'-methylenebis[6-aminobenzoic acid] and 4,4'-[(1,1,3,3-tetramethyl-1,3-disiloxanediy)bis(methyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 83891-22-9

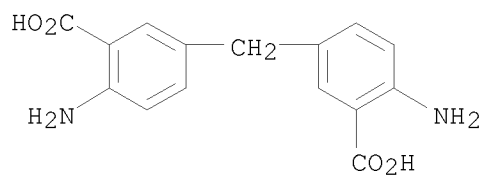
CMF C18 H28 N2 O3 Si2



CM 2

CRN 7330-46-3

CMF C15 H14 N2 O4



CM 3

CRN 485801-30-7

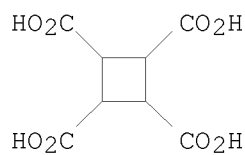
CMF C14 H20 O8

CCI IDS

CM 4

CRN 53159-92-5

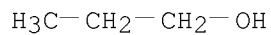
CMF C8 H8 O8



CM 5

CRN 71-23-8

CMF C3 H8 O



CM 6

CRN 56941-72-1

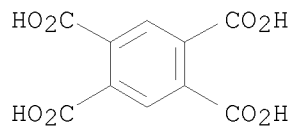
CMF C16 H18 O8

CCI IDS

CM 7

CRN 89-05-4

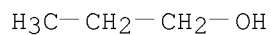
CMF C10 H6 O8



CM 8

CRN 71-23-8

CMF C3 H8 O



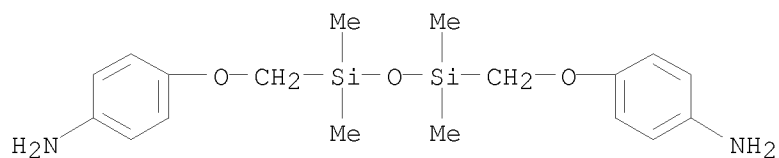
RN 485801-34-1 CAPLUS

CN 1,2,4,5-Benzenetetracarboxylic acid, dipropyl ester, polymer with  
3,5-diaminobenzoic acid, dipropyl dihydrogen  
1,2,3,4-cyclobutanetetracarboxylate and  
4,4'-[(1,1,3,3-tetramethyl-1,3-  
disiloxanediyl)bis(methyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 83891-22-9

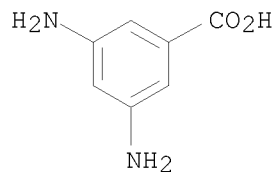
CMF C18 H28 N2 O3 Si2



CM 2

CRN 535-87-5

CMF C7 H8 N2 O2



CM 3

CRN 485801-30-7

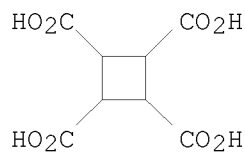
CMF C14 H20 O8

CCI IDS

CM 4

CRN 53159-92-5

CMF C8 H8 O8



CM 5

CRN 71-23-8  
CMF C3 H8 O

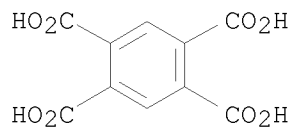
H<sub>3</sub>C-CH<sub>2</sub>-CH<sub>2</sub>-OH

CM 6

CRN 56941-72-1  
CMF C16 H18 O8  
CCI IDS

CM 7

CRN 89-05-4  
CMF C10 H6 O8



CM 8

CRN 71-23-8  
CMF C3 H8 O

H<sub>3</sub>C-CH<sub>2</sub>-CH<sub>2</sub>-OH

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 41 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2002:978486 CAPLUS  
DOCUMENT NUMBER: 138:63943  
TITLE: Polymer for preparing liquid crystal alignment layer  
INVENTOR(S): Park, Jung Ki; Sung, Shi Joon; Lee, Jong Woo  
PATENT ASSIGNEE(S): Korea Advanced Institute of Science and Technology, S. Korea  
SOURCE: U.S. Pat. Appl. Publ., 5 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020198358	A1	20021226	US 2002-94897	20020308
US 6749895	B2	20040615		
KR 2002072342	A	20020914	KR 2001-12152	20010309
PRIORITY APPLN. INFO.:			KR 2001-12152	A 20010309

OTHER SOURCE(S): MARPAT 138:63943

AB The present invention provides a polymer in which coumarin, a photo-reactive mol., is grafted onto a polyimide for preparing liquid crystal alignment layer which has a superior alignment property and an excellent

thermal stability in photo-alignment, a process for preparing the said grafted polymer, a process for preparing liquid crystal alignment layer by employing the said grafted polymer, and a liquid crystal alignment layer prepared by the process. The polymer of the invention is prepared by mixing a coumarin compound with a polyimide, dissolving the mixture in an organic solvent,

adding a catalyst, and stirring under an environment of N<sub>2</sub> gas. The polymer of the invention is superior in terms of the thermal stability, which makes possible its universal application for the development of a novel liquid crystal display(LCD).

IT 122402-70-4DP, reaction products with hydroxycoumarin or hydroxy(alkylenoxy)coumarin 479207-71-1DP, 1,2,3,4-Cyclobutanetetracarboxylic acid-3,5-diaminobenzoic acid copolymer, reaction products with hydroxycoumarin or hydroxy(alkylenoxy)coumarin 479207-72-2DP, reaction products with hydroxycoumarin or hydroxy(alkylenoxy)coumarin 479207-73-3DP, reaction products with hydroxycoumarin or hydroxy(alkylenoxy)coumarin  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polymer for preparing liquid crystal alignment layer)

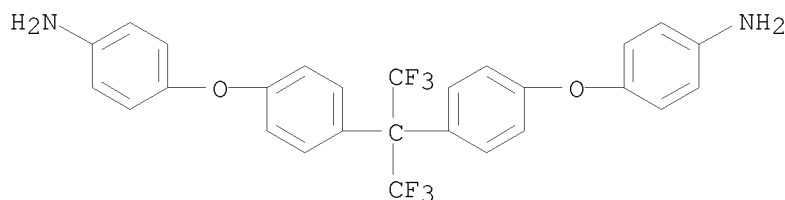
RN 122402-70-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 69563-88-8

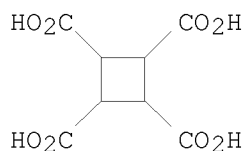
CMF C27 H20 F6 N2 O2



CM 2

CRN 53159-92-5

CMF C8 H8 O8



RN 479207-71-1 CAPLUS

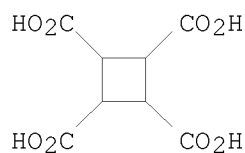
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 3,5-diaminobenzoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 53159-92-5

CMF C8 H8 O8

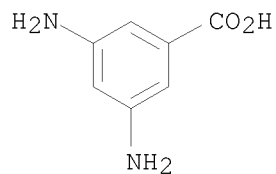




CM 2

CRN 535-87-5

CMF C7 H8 N2 O2



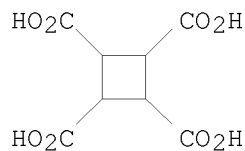
RN 479207-72-2 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with  
4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 53159-92-5

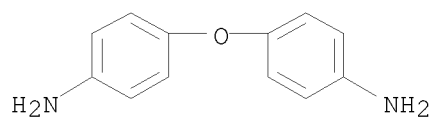
CMF C8 H8 O8



CM 2

CRN 101-80-4

CMF C12 H12 N2 O



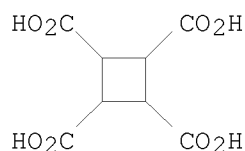
RN 479207-73-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with  
4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (CA  
INDEX NAME)

CM 1

CRN 53159-92-5

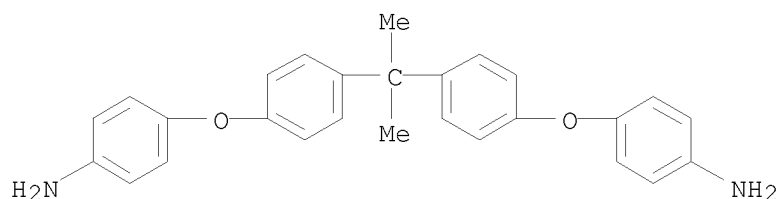
CMF C8 H8 O8



CM 2

CRN 13080-86-9

CMF C27 H26 N2 O2



L4 ANSWER 42 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:946054 CAPLUS

DOCUMENT NUMBER: 138:19512

TITLE: Compositions for inhibiting bone resorption containing  
farnesyl diphosphate synthase inhibiting  
bisphosphonates and squalene synthase inhibitors

INVENTOR(S): Reszka, Alfred A.; Fisher, John E.

PATENT ASSIGNEE(S): Merck & Co., Inc., USA

SOURCE: PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

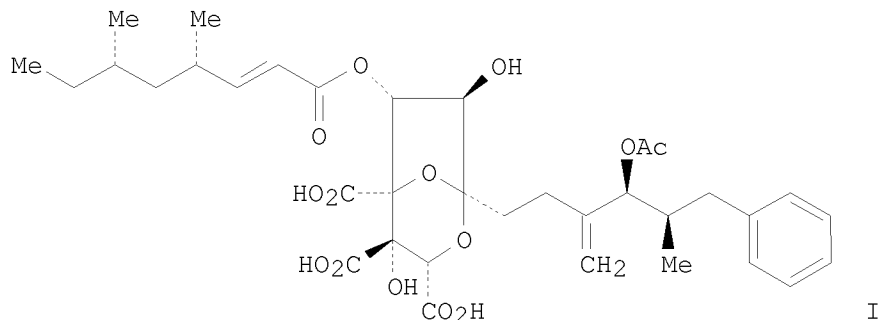
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002098354	A2	20021212	WO 2002-US17142	20020531
WO 2002098354	A3	20030227		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2448656	A1	20021212	CA 2002-2448656	20020531
AU 2002303925	A1	20021216	AU 2002-303925	20020531
EP 1397146	A2	20040317	EP 2002-731990	20020531
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2004534048	T	20041111	JP 2003-501396	20020531
US 20040180862	A1	20040916	US 2003-479922	20031205
PRIORITY APPLN. INFO.:			US 2001-295876P	P 20010605
			WO 2002-US17142	W 20020531

GI



AB The present invention relates to parenteral compns. and methods for inhibiting bone resorption in a mammal while counteracting potential local irritation at injection sites. The compns. comprise the combination of a pharmaceutically effective amount of a farnesyl diphosphate synthase inhibiting bisphosphonate such as alendronate or a pharmaceutically-acceptable salt thereof and a pharmaceutically effective amount of a squalene synthase inhibitor such as zaragozic acid A (I).

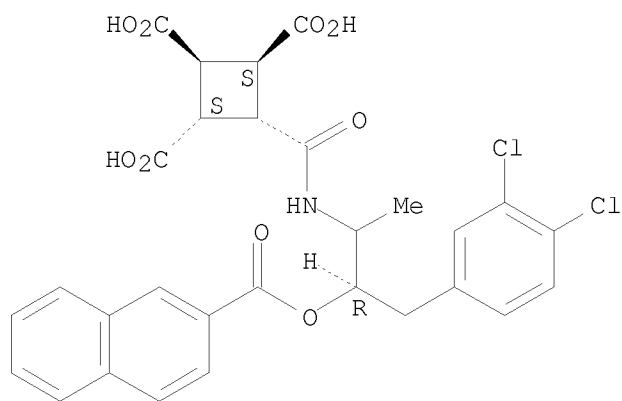
IT 477908-44-4 477908-45-5

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(compns. for inhibiting bone resorption containing farnesyl diphosphate synthase inhibiting bisphosphonates and squalene synthase inhibitors)

RN 477908-44-4 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-,  
(1S,2 $\beta$ ,3S,4 $\alpha$ )- (CA INDEX NAME)

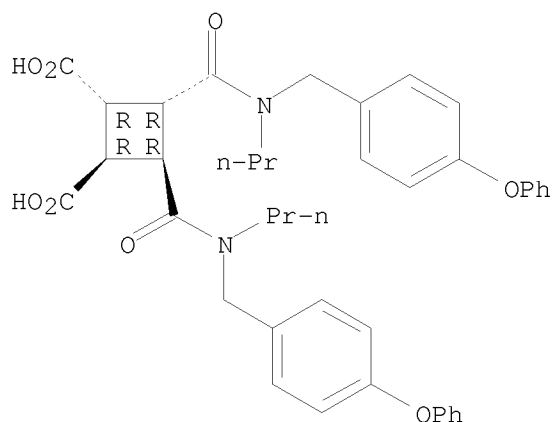
Absolute stereochemistry.



RN 477908-45-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)- (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 43 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:946053 CAPLUS

DOCUMENT NUMBER: 138:19511

TITLE: Compositions for inhibiting bone resorption containing HMG-CoA reductase inhibitors and squalene synthase inhibitors

INVENTOR(S): Reszka, Alfred A.; Fisher, John E.

PATENT ASSIGNEE(S): Merck & Co., Inc., USA

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

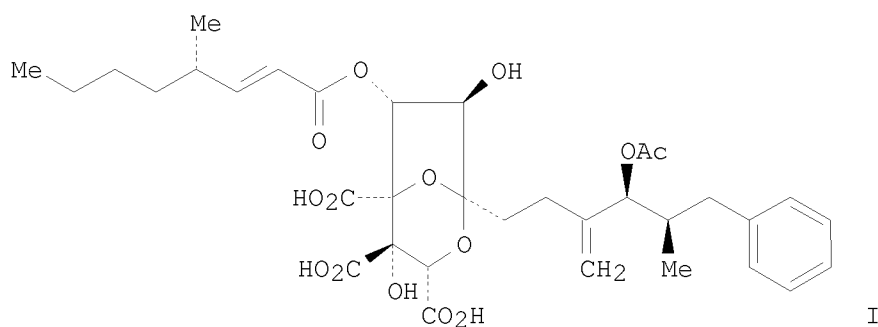
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002098353	A2	20021212	WO 2002-US17141	20020531
WO 2002098353	A3	20030227		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002345434	A1	20021216	AU 2002-345434	20020531
PRIORITY APPLN. INFO.:			US 2001-295877P	P 20010605
			WO 2002-US17141	W 20020531

GI



AB The present invention relates to parenteral compns. and methods for inhibiting bone resorption, stimulating bone formation and/or treating or preventing elevated blood cholesterol levels in a mammal while counteracting potential local irritation at injection sites. The compns. useful herein comprise the combination of a pharmaceutically effective amount of a HMG-CoA reductase inhibitor such as simvastatin or a pharmaceutically-acceptable salt thereof and a pharmaceutically effective amount of a squalene synthase inhibitor zaragozic acid A (I).

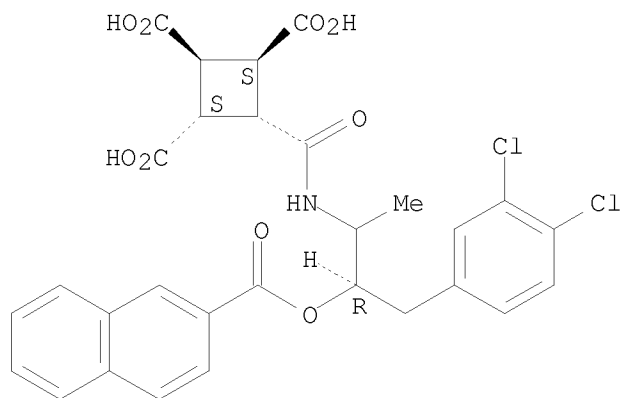
IT 477908-44-4 477908-45-5

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(compns. for inhibiting bone resorption containing HMG-CoA reductase inhibitors and squalene synthase inhibitors)

RN 477908-44-4 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-,  
(1S,2 $\beta$ ,3S,4 $\alpha$ )- (CA INDEX NAME)

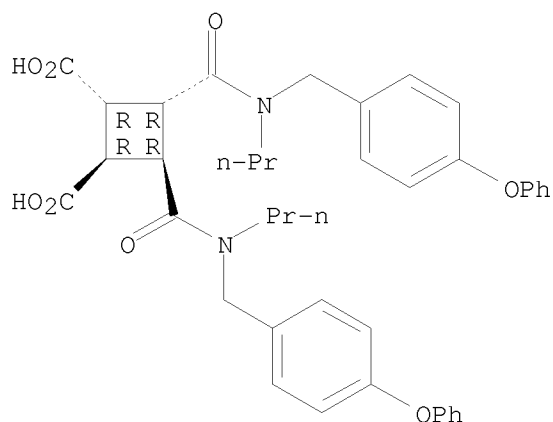
Absolute stereochemistry.



RN 477908-45-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)- (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 44 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:838956 CAPLUS

DOCUMENT NUMBER: 138:162556

TITLE: A new three-dimensional coordination polymer containing trans,trans,trans-cyclobutanetetracarboxylate and edge-sharing LaO<sub>9</sub> polyhedral chains

AUTHOR(S): Kim, YooJin; Jung, Duk-Young

CORPORATE SOURCE: Department of Chemistry-BK21 and the Institute of Basic Sciences, Sungkyunkwan University, Suwon, 440-746, S. Korea

SOURCE: Inorganica Chimica Acta (2002), 338, 229-234

CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 138:162556

AB A novel three-dimensional open-framework La(H<sub>2</sub>O)(Hcbtc3-) (1) (H<sub>4</sub>cbtc = 1,2,3,4- cyclobutanetetracarboxylic acid) was synthesized hydrothermally in basic aqueous solution. Its crystal structure was solved by single crystal x-ray diffraction, and characterized by powder x-ray diffraction, TGA, FTIR and elemental anal. The structure of 1 consists of infinite edge-sharing LaO<sub>8</sub>(H<sub>2</sub>O) polyhedral chains along the [100] direction, connected by Hcbtc3- along the [010] and [001] directions. The Hcbtc3- in 1 has four interconnecting carboxylate groups of all trans conformations, which include one deprotonated carboxylates among the four carboxylate groups. The prepared La carboxylate polymer has high thermal stability up to 400° and could be dehydrated at >200° at N atmospheric

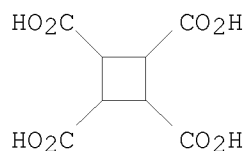
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of lanthanum cyclobutanetetracarboxylate coordination polymer)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



IT 496030-20-7P

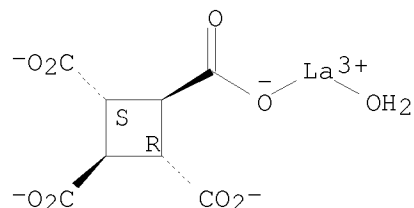
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP

(Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent) (preparation, crystal structure, thermal decomposition and reversible dehydration/rehydration of)

RN 496030-20-7 CAPLUS

CN Lanthanate(1-), aqua[(1 $\alpha$ , 2 $\beta$ , 3 $\alpha$ , 4 $\beta$ )-1, 2, 3, 4-cyclobutanetetracarboxylato(4-)- $\kappa$ O]-, hydrogen (9CI) (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 45 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:592321 CAPLUS

DOCUMENT NUMBER: 137:161308

TITLE: Dry silver heat-developable photographic film containing carbohydrazide reductant with improved mechanical strength

INVENTOR(S): Kato, Kazunobu

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 55 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

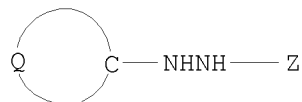
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002221768	A	20020809	JP 2001-17595	20010125
PRIORITY APPLN. INFO.:			JP 2001-17595	20010125
OTHER SOURCE(S):	MARPAT	137:161308		

GI



AB The photog. film comprises, on a support, a photothermog. material containing an organic Ag salt, a hydrophobic organic binder, and a reducing agent (I)

(A)kB

[k  $\geq$  2; Z is linked with B; B = connection group having k valance; B may be a polymer; Z = carbamoyl, acyl, sulfamoyl, alkoxycarbonyl,

aryloxycarbonyl; Q = residue required to form an unsatd. ring with C].  
 The reducing agent crosslinks with the binder and hardens the film at the  
 heat-developed region, so that the film shows high mech. strength after  
 heat development.

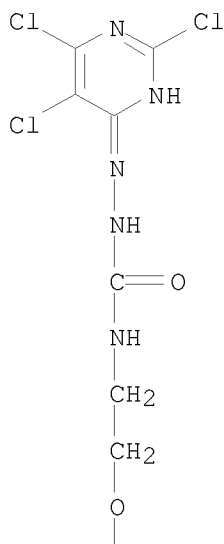
IT 445278-89-7

RL: TEM (Technical or engineered material use); USES (Uses)  
 (dry silver heat-developable photog. film containing carbonylhydrazide  
 reductant)

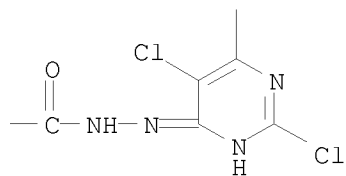
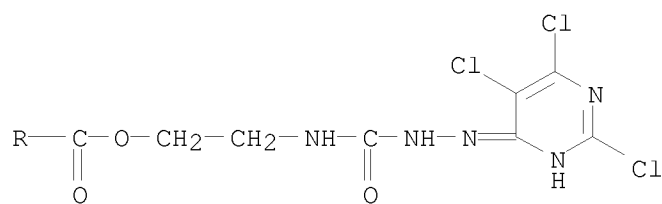
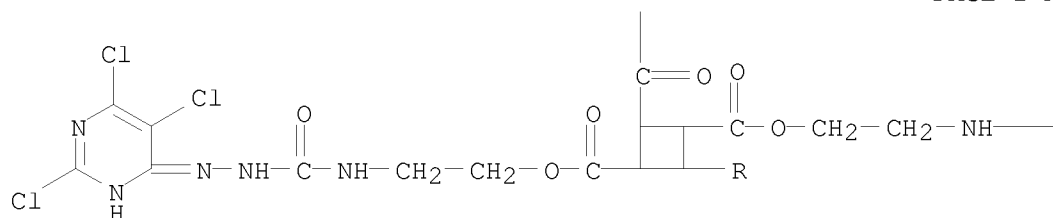
RN 445278-89-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetrakis[2-[[[2-(2,5,6-trichloro-4-  
 pyrimidinyl)hydrazinyl]carbonyl]amino]ethyl] ester (CA INDEX NAME)

PAGE 1-A







TITLE: Preparation of sialic acid dendrimers as multivalent neuraminidase inhibitors and anti-influenza agents

INVENTOR(S): Wu, Wen-Yang; Dowle, Michael Dennis; Jin, Betty; Macdonald, Simon John Fawcett; Mason, Andrew McMurtrie; McConnell, Darryl; Watson, Keith

PATENT ASSIGNEE(S): Biota Scientific Management Pty. Ltd., Australia

SOURCE: PCT Int. Appl., 85 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002020514	A1	20020314	WO 2001-AU1128	20010907
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2416336	A1	20020314	CA 2001-2416336	20010907
AU 2001085601	A	20020322	AU 2001-85601	20010907
EP 1315719	A1	20030604	EP 2001-964755	20010907
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001013755	A	20030708	BR 2001-13755	20010907
JP 2004507564	T	20040311	JP 2002-525135	20010907
AU 2001285601	B2	20051027	AU 2001-285601	20010907
IN 2003KN00018	A	20050311	IN 2003-KN18	20030103
MX 2003PA02022	A	20040504	MX 2003-PA2022	20030307
US 20040058853	A1	20040325	US 2003-363988	20031014
US 7205333	B2	20070417		
PRIORITY APPLN. INFO.:			AU 2000-10	A 20000908
			WO 2001-AU1128	W 20010907
OTHER SOURCE(S):			MARPAT 136:247832	
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to a dendrimer compds. I in which : X is O or CH; R2 is azido, hydroxy, guanidino, amino, amidine, imidate; R2 is acyl or sulfonyl; Y is O, substituted amine; CG is a core group selected from an optionally substituted cyclic, straight or branched group or a combination thereof having from 1 to 200 atoms in its backbone, in which the backbone atoms are selected from C, N, O and S; and L is a linking group of from 0 to 20 backbone atoms, in which the backbone and terminal atoms are selected from C, N, O and S; or a pharmaceutically acceptable salt or derivative thereof which comprises three or more neuraminidase-binding groups attached to a spacer or linking group, in which the neuraminidase-binding group is a compound which binds to the active site of influenza virus neuraminidase, but is not cleaved by the neuraminidase. The invention also relates to processes for the preparation of the multimeric compound defined above, pharmaceutical compns. containing them or methods for the treatment and/or prophylaxis of a viral infection involving them. Thus, dendrimer

II.3CF3CO2H salt [R1 = guanidino, R2 = acetyl, Y = O, L = CON(CH2)6] was prepared and tested in mice as neuraminidase inhibitor and anti-influenza agent (dose = 0.01-1 mg/kg).

IT 403660-75-3P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

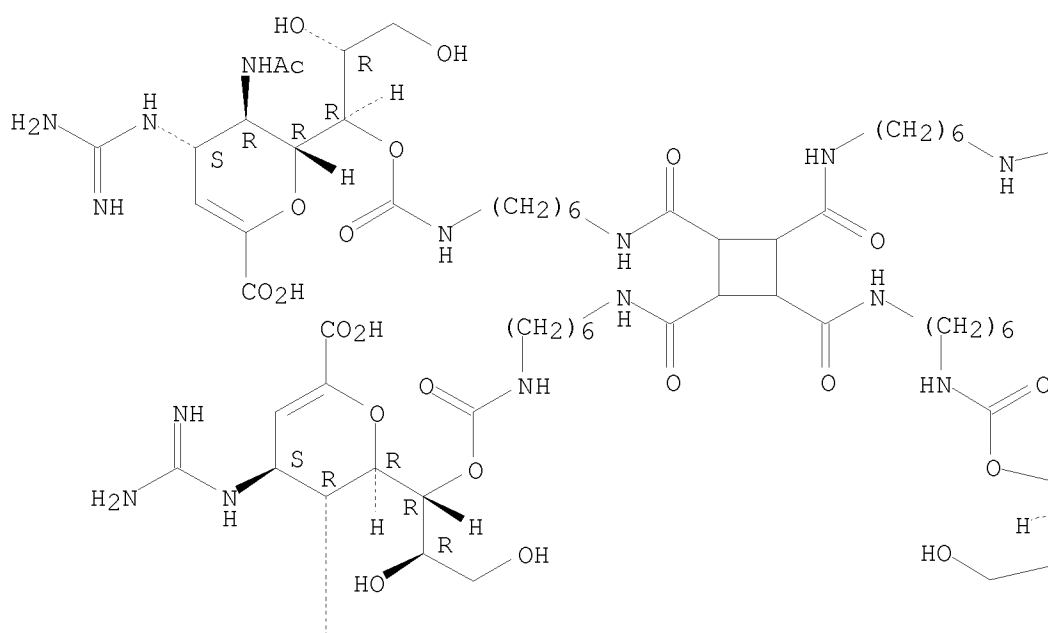
(preparation of sialic acid dendrimers as multivalent neuraminidase inhibitors and antiinfluenza agents)

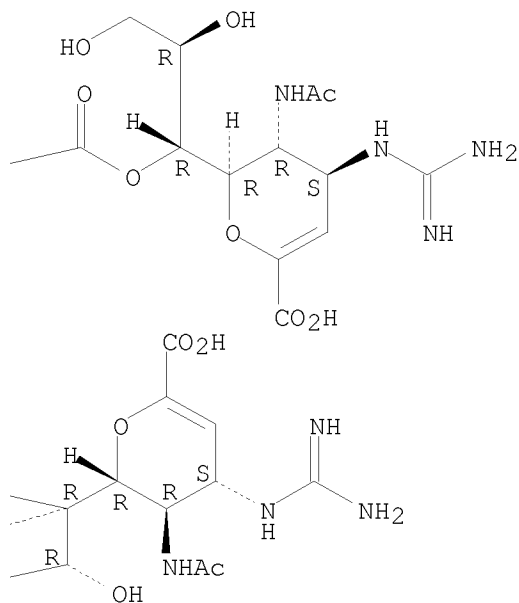
RN 403660-75-3 CAPLUS

CN D-glycero-D-galacto-Non-2-enonic acid, 5-(acetylamino)-4-[(aminoiminomethyl)amino]-2,6-anhydro-3,4,5-trideoxy-, 7,7',7'',7'''-[1,2,3,4-cyclobutanetetrayltetrakis(carbonylimino-6,1-hexanediyl)]tetrakis[carbamate] (9CI) (CA INDEX NAME)

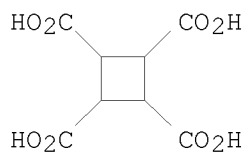
Absolute stereochemistry.

PAGE 1-A





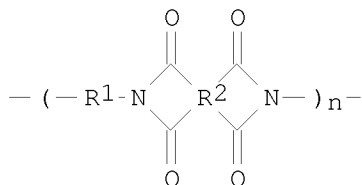
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of sialic acid dendrimers as multivalent neuraminidase  
 inhibitors and antiinfluenza agents)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 47 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:748133 CAPLUS  
 DOCUMENT NUMBER: 135:310925  
 TITLE: Positive photosensitive polyimide resin composition  
 INVENTOR(S): Nakayama, Tomonari; Nihira, Takayasu; Fukuro,  
 Hiroyoshi  
 PATENT ASSIGNEE(S): Nissan Chemical Industries, Ltd., Japan  
 SOURCE: PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001075525	A1	20011011	WO 2001-JP2502	20010327
W: CN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
TW 561181	B	20031111	TW 2001-90107372	20010328
JP 2001343747	A	20011214	JP 2001-95163	20010329
PRIORITY APPLN. INFO.:			JP 2000-94415	A 20000330
OTHER SOURCE(S):	MARPAT 135:310925			
GI				



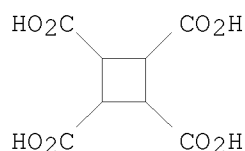
AB A pos.-working photosensitive polyimide resin composition comprises a solvent-soluble polyimide represented by the general formula I (n = 3-10,000; 1 to 100 mol parts of R1s are a divalent organic group having one or more groups which are at least one member selected from the group consisting of phenolic hydroxyl, carboxyl, thiophenol, and sulfo groups and 0 to 99 mol parts are a divalent organic group containing none of phenolic hydroxyl, carboxyl, thiophenol, and sulfo groups; R2 is a tetravalent organic group.), a carboxylic acid or carboxylic acid derivative, and a photosensitive o-quinonediazide compound The photosensitive polyimide resin composition can

be developed with an aqueous alkali solution and is excellent in sensitivity and developability.

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working photoresist comps. containing polyimide,  
 naphthoquinonediazide compound and carboxylic acid derivs.)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 48 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:730856 CAPLUS

DOCUMENT NUMBER: 135:273989

TITLE: Polymer blend compositions and processes for preparing liquid crystal alignment layers and crystal cells therefrom

INVENTOR(S): Park, Jung-Ki; Kim, Hee-Tak; Lee, Jong-Woo; Sung, Shi-Joon

PATENT ASSIGNEE(S): Korea Advanced Institute of Science and Technology, S.

SOURCE: Korea  
PCT Int. Appl., 14 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001072871	A1	20011004	WO 2001-KR504	20010328
W: DE, JP, KR, US				
KR 2002001898	A	20020109	KR 2000-16260	20000329
JP 2003529111	T	20030930	JP 2001-571798	20010328
JP 3733072	B2	20060111		
DE 10191420	T5	20040701	DE 2001-10191420	20010328
DE 10191420	B4	20071220		
KR 2002030734	A	20020425	KR 2001-705362	20010427
US 20020188075	A1	20021212	US 2001-979898	20011128
US 6731362	B2	20040504		

PRIORITY APPLN. INFO.: KR 2000-16260 A 20000329  
WO 2001-KR504 W 20010328

AB The photoreactive compns., having a high pretilt angle in photo-alignment and good thermal stability, comprise: (A) 10-90% a cinnamate polymer, and (B) 10-90% a polyimide, and the processes comprise steps of: (1) mixing A and B and dissolving the mixture in an organic solvent, (2) spin coating the dissolved mixture onto a glass plate, (3) heating the mixture to obtain an alignment layer (F), and (4) irradiating UV ray to F to align liquid crystals in a preferred direction.

IT 122402-70-4

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(compns. and processes for preparing liquid crystal alignment layers and crystal cells therefrom)

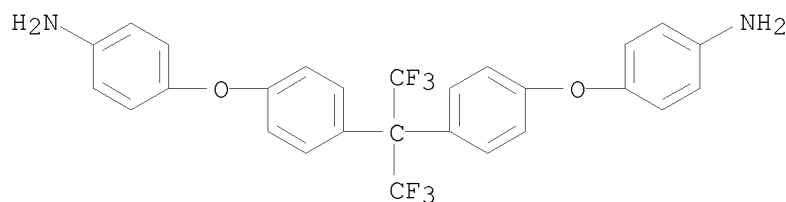
RN 122402-70-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with  
4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 69563-88-8

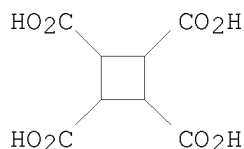
CMF C27 H20 F6 N2 O2



CM 2

CRN 53159-92-5

CMF C8 H8 O8



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 49 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:489385 CAPLUS  
 DOCUMENT NUMBER: 135:77662  
 TITLE: Preparation of alicyclic epoxy ester for cured resin  
 INVENTOR(S): Shimoda, Teruyoshi; Date, Hideki; Takahashi, Yasushi; Hatanaka, Kohei  
 PATENT ASSIGNEE(S): Asahi Kasei K. K., Japan; Asahi Kasei Epoxy Co., Ltd.  
 SOURCE: PCT Int. Appl., 226 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001047907	A1	20010705	WO 2000-JP9352	20001227
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
JP 2001181238	A	20010703	JP 1999-368841	19991227
JP 2003286276	A	20031010	JP 1999-369308	19991227
PRIORITY APPLN. INFO.:			JP 1999-368841	A 19991227
			JP 1999-369308	A 19991227

OTHER SOURCE(S): MARPAT 135:77662

AB Compound RXxYyZz is prepared for cured resin, wherein X is 2,3-epoxycyclohexyl ester or 2,3-epoxycyclopentyl ester, Y is epoxyalkyl ester and Z is alkyl ester, x +1-20. yr=0-5, z=0-5, and x + y =2-20. Thus, 1,3,5-benzenetricarboxylic acid 2,3-epoxycyclohexyl ester prepared by transesterification of corresponding acid Me ester and 3-hydroxycyclohexene followed by oxidation was mixed with curing agent at ratio 19.5/80.5 to give a product, showing good weather and water resistance.

IT 346705-72-4P

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of alicyclic epoxy ester for cured resin)

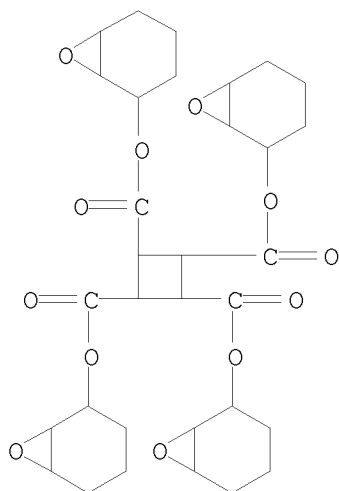
RN 346705-72-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetrakis(7-oxabicyclo[4.1.0]hept-2-yl) ester, polymer with hexahydro-1,3-isobenzofurandione (9CI) (CA INDEX NAME)

CM 1

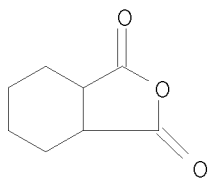
CRN 346705-71-3

CMF C32 H40 O12



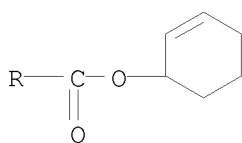
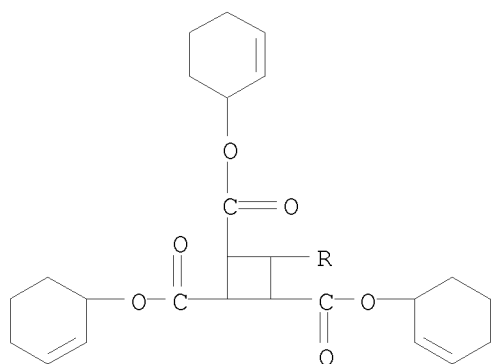
CM 2

CRN 85-42-7  
CMF C8 H10 O3

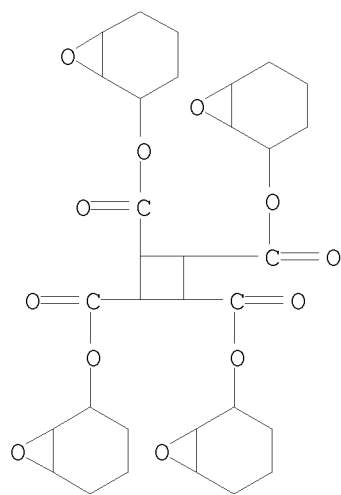


IT 346705-70-2P 346705-71-3P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation of alicyclic epoxy ester for cured resin)  
RN 346705-70-2 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetra-2-cyclohexen-1-yl  
ester (CA INDEX NAME)

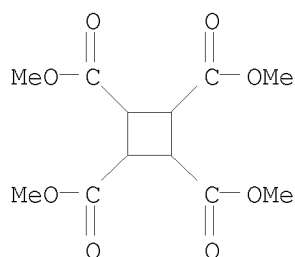




RN 346705-71-3 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 1,2,3,4-tetra-7-oxabicyclo[4.1.0]hept-2-yl ester (CA INDEX NAME)

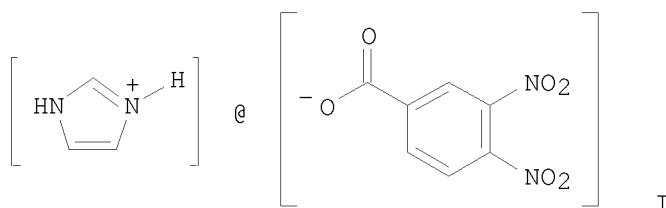


IT 14495-41-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of alicyclic epoxy ester for cured resin)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA  
 INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 50 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2000:762472 CAPLUS  
 DOCUMENT NUMBER: 134:71184  
 TITLE: Design of Supramolecular Layers via Self-Assembly of Imidazole and Carboxylic Acids  
 AUTHOR(S): MacDonald, John C.; Dorrestein, Pieter C.; Pilley, Malissa M.  
 CORPORATE SOURCE: Department of Chemistry, Northern Arizona University, Flagstaff, AZ, 86011-5698, USA  
 SOURCE: Crystal Growth & Design (2001), 1(1), 29-38  
 CODEN: CGDEFU; ISSN: 1528-7483  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB The supramol. chemical and crystal structures of salts of imidazole with one monocarboxylic acid (I), nine different dicarboxylic acids, and one tetracarboxylic acid are reported. These salts serve as building blocks that self-assemble via ionic O-H...O and N-H...O hydrogen bonds when crystallized. These strong hydrogen bonds generate two types of chains that intersect at the anions and form polar hydrogen-bonded layers with four different motifs. These layers serve as scaffolds with which to control mol. packing in two dimensions for engineering the structures of crystals. All imidazolium cations function as multidentate proton donors by forming two or three C-H...O hydrogen bonds in addition to two N-H...O hydrogen bonds. Strong O-H...O and N-H...O hydrogen bonds define structure and connectivity within layers, while weaker C-H...O hydrogen bonds dominate interactions between layers in these salts.

IT 315208-99-2P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (supramol. chemical and crystal structures of salts of imidazole with carboxylic acids)

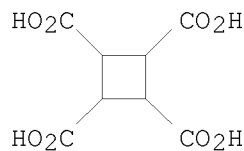
RN 315208-99-2 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, compd. with 1H-imidazole (1:2)

(9CI) (CA INDEX NAME)

CM 1

CRN 53159-92-5

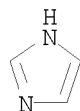
CMF C8 H8 O8



CM 2

CRN 288-32-4

CMF C3 H4 N2



REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 51 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:395913 CAPLUS

DOCUMENT NUMBER: 133:317334

TITLE: Inhibition of farnesyltransferase with A-176120, a novel and potent farnesyl pyrophosphate analogue

AUTHOR(S): Tahir, S. K.; Gu, W.-Z.; Zhang, H.-C.; Leal, J.; Lee, J. Y.; Kovar, P.; Saeed, B.; Cherian, S. P.; Devine, E.; Cohen, J.; Warner, R.; Wang, Y.-C.; Stout, D.; Arendsen, D. L.; Rosenberg, S.; Ng, S.-C.

CORPORATE SOURCE: Pharmaceutical Product Research Division, Cancer Research, Abbott Laboratories, Abbott Park, IL, 60064, USA

SOURCE: European Journal of Cancer (2000), 36(9), 1161-1170  
CODEN: EJCAEL; ISSN: 0959-8049

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Farnesylation of Ras is required for its transforming activity in human cancer and the reaction is catalyzed by the enzyme farnesyltransferase. Recently, we discovered a novel chemical series of potent farnesyl pyrophosphate (FPP) analogs which selectively inhibited farnesyltransferase. Our most potent compound to date in this series, A-176120, selectively inhibited farnesyltransferase activity (IC<sub>50</sub> 1.2±0.3 nM) over the closely related enzymes geranylgeranyltransferase I (GGTaseI) (IC<sub>50</sub> 423±1.8 nM), geranylgeranyltransferase II (GGTaseII) (IC<sub>50</sub> 3000 nM) and squalene synthase (SSase) (IC<sub>50</sub> 10000 nM). A-176120 inhibited ras processing in H-ras-transformed NIH3T3 cells and HCT116 K-ras-mutated cells (ED<sub>50</sub> 1.6 and 0.5 μM, resp.). The anti-angiogenic potential of A-176120 was demonstrated by a decrease in Ras processing, cell proliferation and capillary structure formation of human umbilical vein endothelial cells (HUVEC), and a decrease in the secretion of vascular endothelial growth factor (VEGF) from HCT116 cells.

In vivo, A-176120 reduced H-ras NIH3T3 tumor growth and extended the lifespan of nude mice inoculated with H- or K-ras-transformed NIH3T3 cells. A-176120 also had an additive effect in combination with cyclophosphamide in nude mice inoculated with K-ras NIH3T3 transformed cells. Overall, our results demonstrate that A-176120 is a potent FPP mimetic with both antitumor and anti-angiogenic properties.

IT 169941-83-7, A 87049 303068-56-6, A 87050  
303068-57-7, A 88681

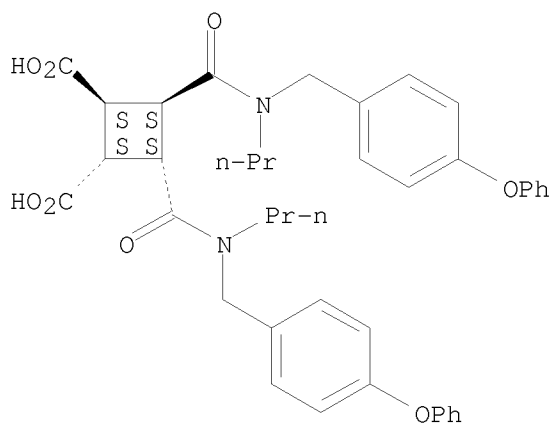
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(farnesyltransferase inhibition by A-176120, novel and potent farnesyl pyrophosphate analog)

RN 169941-83-7 CAPLUS

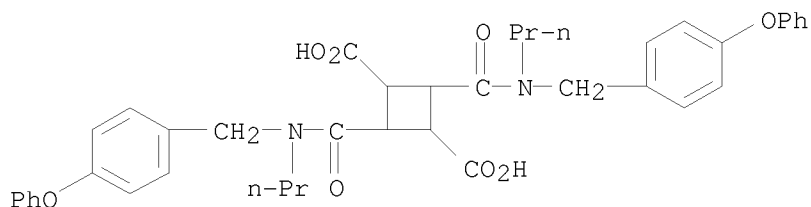
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



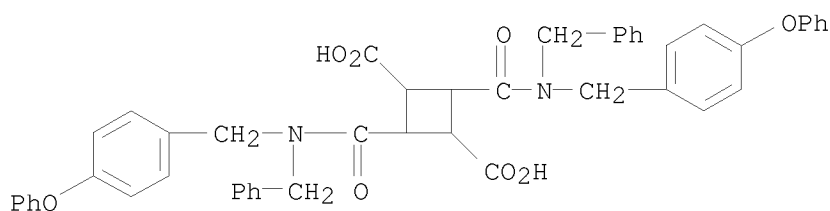
RN 303068-56-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)



RN 303068-57-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]- (CA INDEX NAME)



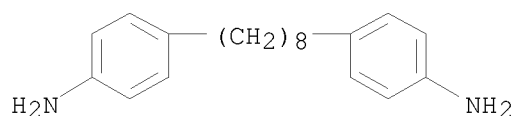
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 52 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1999:770965 CAPLUS  
DOCUMENT NUMBER: 132:13193  
TITLE: Polyimide precursors as liquid crystal orientation agents  
INVENTOR(S): Eguchi, Toshimasa  
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 11335461	A	19991207	JP 1998-146166	19980527
PRIORITY APPLN. INFO.:			JP 1998-146166	19980527
AB	The liquid crystal orientation agents consist of polyimide precursors having 4,4'-diaminodiphenyl-C2-12-alkane-based polyamic acid or its alkyl ester unit and those having aromatic diamine- and aliphatic tetracarboxylic acid-based polyamic acid or its alkyl ester unit and form films at baking temperature of <200° with excellent properties. Thus, equimolar 1,4-bis(4-aminophenyl)butane and pyromellitic dianhydride were stirred in N-methyl-2-pyrrolidone and diluted with Bu cellosolve to give a polyamic acid solution (A), sep., another polyamic acid solution (B) was prepared from equimolar 4,4'-diaminodiphenyl ether and 3,4-dicarboxy-1,2,3,4-tetrahydro-1-naphthalenesuccinic dianhydride by a similar method. A 25:75 A-B mixture was applied on a transparent electrode surface of a glass substrate and baked at 180° for 1 h to form a 500-Å film showing no peeling by rubbing.			
IT	251369-25-2P 251369-26-3P RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses) (polyamic acid mixts. for liquid crystal orientation films)			
RN	251369-25-2 CAPLUS			
CN	1,2,3,4-Cyclobutanetetracarboxylic acid, dimethyl ester, polymer with 4,4'-(1,8-octanediyl)bis[benzenamine] (9CI) (CA INDEX NAME)			

CM 1

CRN 228718-74-9  
CMF C20 H28 N2

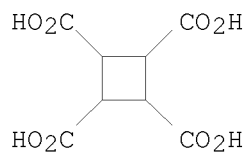


CM 2

CRN 251369-24-1  
CMF C10 H12 O8  
CCI IDS

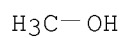
CM 3

CRN 53159-92-5  
CMF C8 H8 O8



CM 4

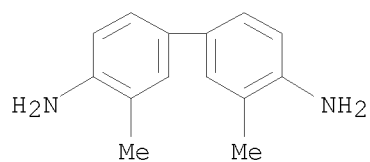
CRN 67-56-1  
CMF C H4 O



RN 251369-26-3 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, dimethyl ester, polymer with  
3,3'-dimethyl[1,1'-biphenyl]-4,4'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 119-93-7  
CMF C14 H16 N2

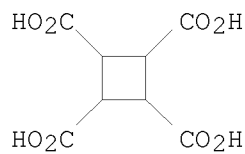


CM 2

CRN 251369-24-1  
CMF C10 H12 O8  
CCI IDS

CM 3

CRN 53159-92-5  
CMF C8 H8 O8



CM 4

CRN 67-56-1  
CMF C H4 O

H<sub>3</sub>C-OH

L4 ANSWER 53 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:489871 CAPLUS  
DOCUMENT NUMBER: 131:345957  
TITLE: A-87049 (Abbott)  
AUTHOR(S): Tahvanainen, Esa  
CORPORATE SOURCE: Department of Biochemistry, National Public Health  
Institute, Helsinki, 00300, Finland  
SOURCE: Current Opinion in Cardiovascular, Pulmonary & Renal  
Investigational Drugs (1999), 1(2), 292-295  
CODEN: CCPRFX; ISSN: 1464-8482  
PUBLISHER: Current Drugs Ltd.  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

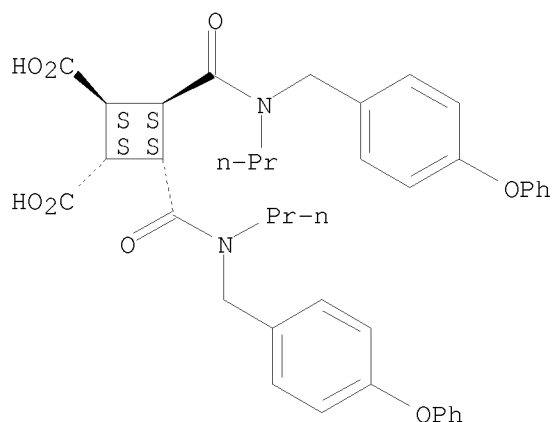
AB A review with 18 refs. A-87049 is a squalene synthetase inhibitor under development by Abbott Labs. for the potential treatment of atherosclerosis and hypercholesterolemia. A-87049 is one of a series of squalene synthetase inhibitors based on the squalestatin template from which new, wholly synthetic squalene synthetase inhibitors have been designed. A-87049 was the most potent inhibitor of squalene synthetase activity in the series. Daily oral administration of the compound at 20 mg/kg for 5 days to cynomolgus monkeys resulted in an approx. 12% decrease in total cholesterol and a 36% decrease in low-d.-lipoprotein cholesterol, while high-d. lipoprotein cholesterol and triglycerides remained unchanged. Further studies on A-87049 and its more potent analogs are underway to confirm their clin. utility. Less squalene synthetase-inhibiting activity was shown by corresponding 1,3-disubstituted cyclobutane-derived compds., but potent farnesyltransferase inhibition was observed

IT 169941-83-7P, A 87049  
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)  
(pharmacol. of squalene synthetase inhibitor A-87049 for treatment of atherosclerosis and hypercholesterolemia)

RN 169941-83-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 54 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:458416 CAPLUS

DOCUMENT NUMBER: 131:299533

TITLE: Organometallic crystal engineering with multidentate building blocks and template guest size effect. Supra-anionic organic frameworks obtained from cyclobutane-1,2,3,4-tetracarboxylic and trans-aconitic acids

AUTHOR(S): Braga, Dario; Benedi, Oscar; Maini, Lucia; Grepioni, Fabrizia

CORPORATE SOURCE: Dipartimento di Chimica G. Ciamician, Universita di Bologna, Bologna, 40126, Italy

SOURCE: Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1999), (15), 2611-2618  
CODEN: JCDBTBI; ISSN: 0300-9246

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The organic acids cyclobutane-1,2,3,4-tetracarboxylic  $C_4H_4(CO_2H)_4$ , trans-aconitic acid  $C_3H_3(CO_2H)_3$ , have been treated in THF with the organometallic hydroxides  $[Co(\eta^5-C_5H_5)_2]+[OH]^-$ ,  $[Co(\eta^5-C_5Me_5)_2]+[OH]^-$ , and  $[Cr(\eta^6-C_6H_6)_2]+[OH]^-$  prepared in situ from the oxidation of the corresponding neutral complexes, to yield the novel organic-organometallic crystalline materials  $[Co(\eta^5-C_5H_5)_2]+[C_4H_4(CO_2H)_3COO]^-$  1,  $[Cr(\eta^6-C_6H_6)_2]+[C_4H_4(CO_2H)_3CO_2]^- \cdot H_2O$  2, and  $[Co(\eta^5-C_5Me_5)_2]+[C_3H_3(CO_2H)_2CO_2(H) \cdot C_3H_3(CO_2H)_2CO_2]^- \cdot 2H_2O$  3. Self-assembly of the monodeprotonated organic acid  $C_4H_4(CO_2H)_4$  generates supra-anionic framework structures held together by O-H  $\cdots$  O and O-H  $\cdots$  O- hydrogen bonds which accommodate the diamagnetic  $[Co(\eta^5-C_5H_5)_2]^+$  and paramagnetic  $[Cr(\eta^6-C_6H_6)_2]^+$  cations, resp. Crystalline 1 does not form single crystals with defined shapes but rather an "enamel" like material which grows parallel to the crystallog. bc plane. The same reaction between trans-aconitic acid and  $[Co(\eta^5-C_5Me_5)_2]+[OH]^-$  generates a large honeycomb-type structure in  $[Co(\eta^5-C_5Me_5)_2]+[C_3H_3(CO_2H)_2CO_2(H) \cdot C_3H_3(CO_2H)_2CO_2]^- \cdot 2H_2O$  3. The effect of the size of the templating units  $[Co(\eta^5-C_5H_5)_2]^+$  and  $[Co(\eta^5-C_5Me_5)_2]^+$  is discussed. The previously unknown structure of the starting material  $[Co(\eta^5-C_5Me_5)_2]+[PF_6]^-$  4, used for the preparation of  $[Co(\eta^5-C_5Me_5)_2]+[OH]^-$ , has also been determined

IT 247154-73-0P 247154-78-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and crystal structure of)

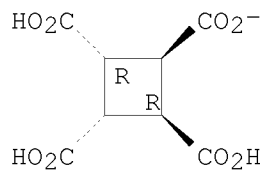


RN 247154-73-0 CAPLUS  
 CN Cobaltocenium, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-1,2,3,4-  
 cyclobutanetetracarboxylate (1:1) (9CI) (CA INDEX NAME)

CM 1

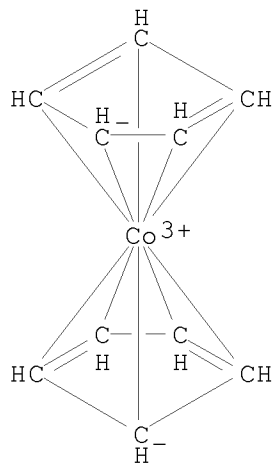
CRN 247154-72-9  
 CMF C8 H7 O8

Relative stereochemistry.



CM 2

CRN 12241-42-8  
 CMF C10 H10 Co  
 CCI CCS



RN 247154-78-5 CAPLUS  
 CN Chromium(1+), bis( $\eta$ 6-benzene)-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-1,2,3,4-cyclobutanetetracarboxylate  
 (1:1), monohydrate (9CI) (CA INDEX NAME)

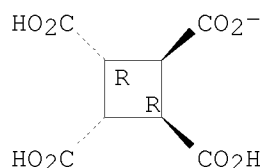
CM 1

CRN 247154-77-4  
 CMF C12 H12 Cr . C8 H7 O8

CM 2

CRN 247154-72-9  
 CMF C8 H7 O8

Relative stereochemistry.

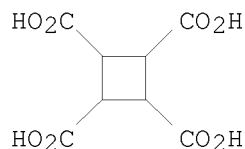


CM 3

CRN 11077-47-7  
CMF C12 H12 Cr  
CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 53159-92-5, Cyclobutane-1,2,3,4-tetracarboxylic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with cobalt organometallic hydroxide)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 55 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:723573 CAPLUS

DOCUMENT NUMBER: 129:343334

ORIGINAL REFERENCE NO.: 129:69929a,69932a

TITLE: Preparation of cyclobutane-derivative inhibitors of squalene synthase and protein farnesyl transferase  
Arendsen, David L.; Baker, William R.; Fakhoury, Stephen A.; Fung, Anthony K. L.; Garvey, David S.; McClellan, William J.; O'connor, Stephen J.; Prasad, Rajnandan N.; Rockway, Todd W.; Rosenberg, Saul H.; Stein, Herman H.; Shen, Wang; Stout, David M.; Sullivan, Gerard M.; Augeri, David J.

INVENTOR(S):  
PATENT ASSIGNEE(S): Abbott Laboratories, USA  
SOURCE: U.S., 45 pp., Cont.-in-part of U.S. Ser. No. 564,524, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

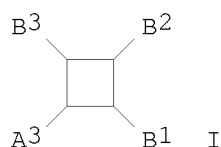
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

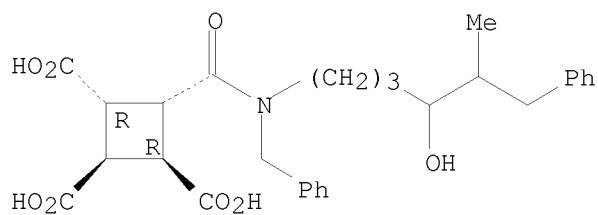
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5831115	A	19981103	US 1996-626859	19960412
CA 2218597	A1	19961024	CA 1996-2218597	19960418
WO 9633159	A1	19961024	WO 1996-US5529	19960418
W: CA, JP, MX				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 821665	A1	19980204	EP 1996-912978	19960418
EP 821665	B1	20011004		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI  
 JP 11504017 T 19990406 JP 1996-531980 19960418  
 EP 1090908 A2 20010411 EP 2000-124275 19960418  
 EP 1090908 A3 20010516  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI  
 AT 206390 T 20011015 AT 1996-912978 19960418  
 PRIORITY APPLN. INFO.: US 1995-426553 B2 19950421  
 US 1995-428357 B2 19950421  
 US 1995-564524 B2 19951129  
 US 1996-626859 A 19960412  
 EP 1996-912978 A3 19960418  
 WO 1996-US5529 W 19960418  
 OTHER SOURCE(S): MARPAT 129:343334  
 GI



AB The title compds (I; permitted substituent values are defined in the disclosure), useful for inhibiting protein farnesyl transferase and the farnesylation of the oncogene protein Ras, or for inhibiting de-novo squalene production resulting in the inhibition of cholesterol biosynthesis, are prepared Thus, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )-1-[N-benzyl-N-[(4S,5S)-(4-hydroxy-5-methyl)-6-phenylhexyl]aminocarbonyl]cyclobutane-2,3,4-tricarboxylic acid, prepared from propionaldehyde in 10 steps, demonstrated a 92% inhibition of protein farnesyl transferase at 1 $\mu$ M.  
 IT 184228-13-5P 184228-14-6P 184228-16-8P  
 184228-17-9P 184228-18-0P 184228-19-1P  
 184228-20-4P 184228-21-5P 184228-22-6P  
 184228-23-7P 184228-24-8P 184228-25-9P  
 184228-26-0P 184228-27-1P 184228-28-2P  
 184228-29-3P 184228-30-6P 184228-31-7P  
 184228-32-8P 184228-39-5P 184228-45-3P  
 184228-48-6P 184228-54-4P 184228-57-7P  
 184228-60-2P 184228-67-9P 184228-69-1P  
 184228-71-5P 184487-96-5P 184487-97-6P  
 184487-98-7P 184487-99-8P 184488-00-4P  
 184488-01-5P 184488-02-6P 184488-03-7P  
 184488-04-8P 184488-05-9P 184488-06-0P  
 184488-07-1P 215372-16-0P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of cyclobutane-derivative inhibitors of squalene synthase and protein farnesyl transferase)  
 RN 184228-13-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-hydroxy-5-methyl-6-phenylhexyl) (phenylmethyl) amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-[partial]- (9CI) (CA INDEX NAME)

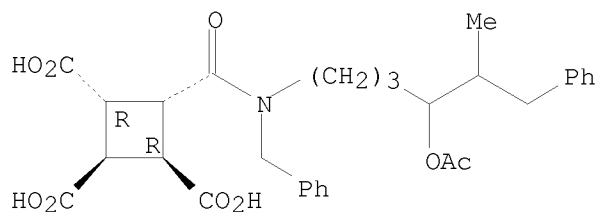
Relative stereochemistry.



RN 184228-14-6 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(acetyloxy)-5-methyl-6-phenylhexyl] (phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-[partial]- (9CI) (CA INDEX NAME)

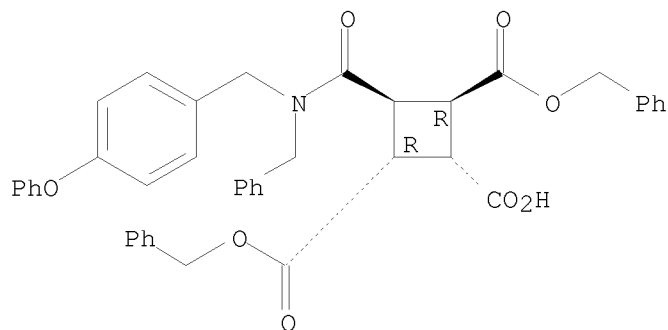
Relative stereochemistry.



RN 184228-16-8 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(4-phenoxyphenyl)methyl] (phenylmethyl)amino]carbonyl]-,  
1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (9CI)  
(CA INDEX NAME)

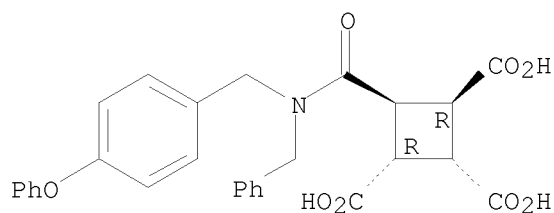
Relative stereochemistry.



RN 184228-17-9 CAPLUS

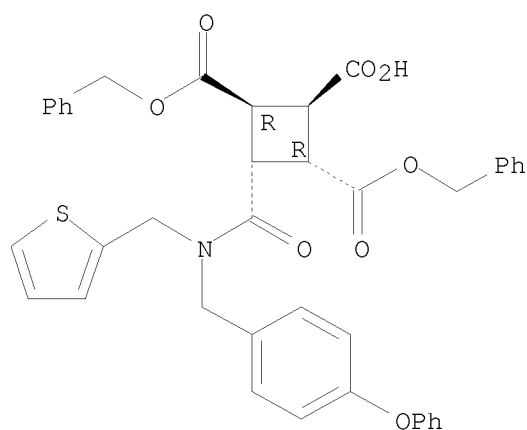
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(4-phenoxyphenyl)methyl] (phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



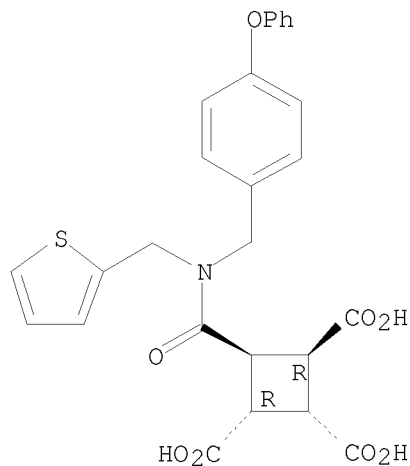
RN 184228-18-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-,  
 1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (9CI)  
 (CA INDEX NAME)

Relative stereochemistry.



RN 184228-19-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

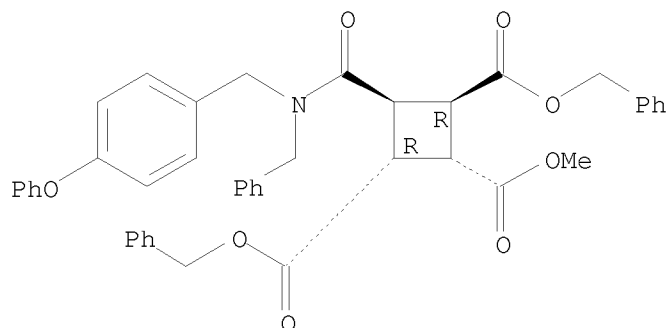
Relative stereochemistry.



RN 184228-20-4 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 2-methyl

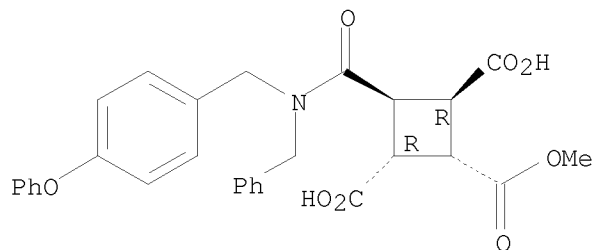
1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI)  
(CA INDEX NAME)

Relative stereochemistry.



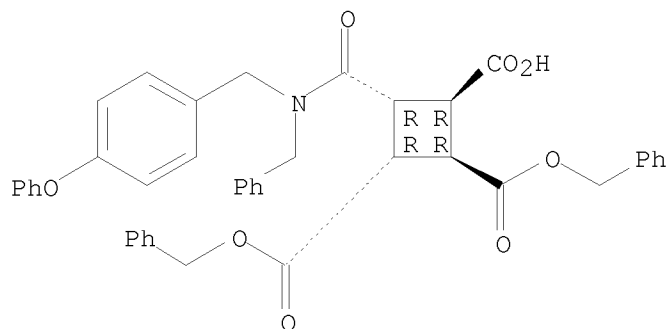
RN 184228-21-5 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 2-methyl  
ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



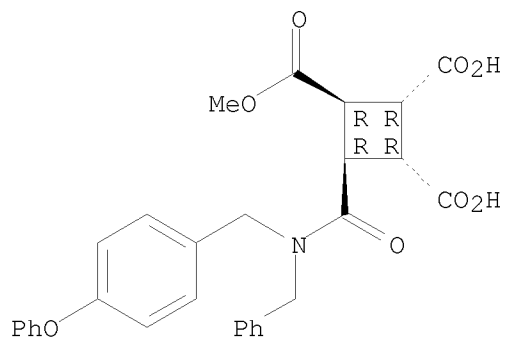
RN 184228-22-6 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



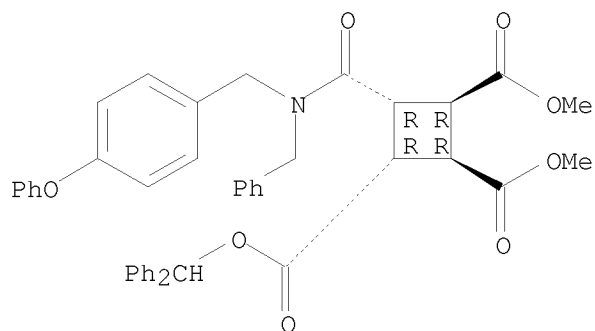
RN 184228-23-7 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1-methyl  
ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



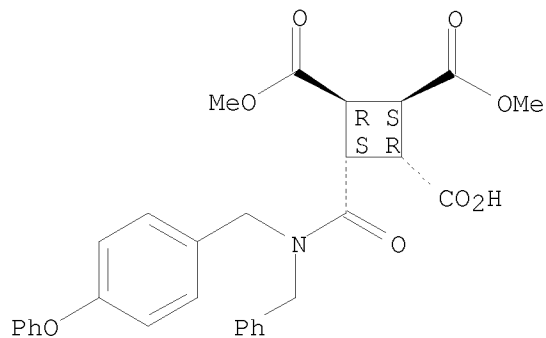
RN 184228-24-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 1-(diphenylmethyl) 2,3-dimethyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



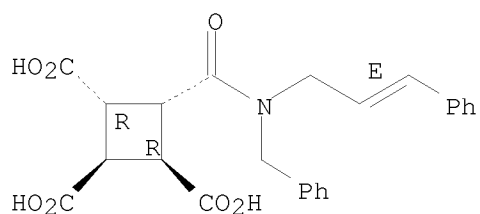
RN 184228-25-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1,2-dimethyl  
 ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



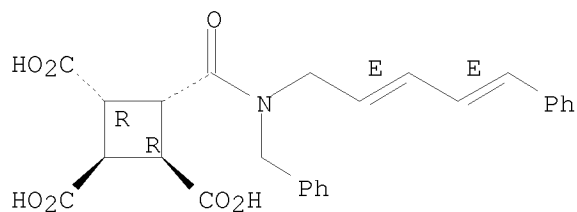
RN 184228-26-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(phenylmethyl)(3-phenyl-2-propenyl)amino]carbonyl]-,  
 [1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
Double bond geometry as shown.



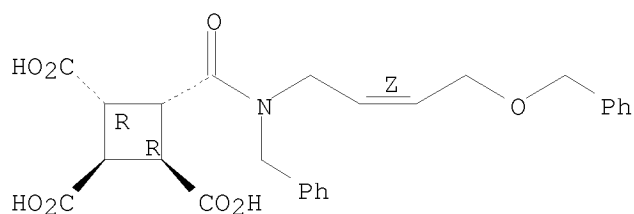
RN 184228-27-1 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(phenylmethyl)(5-phenyl-2,4-pentadienyl)amino]carbonyl]-,  
[1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (2E,4E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
Double bond geometry as shown.



RN 184228-28-2 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(phenylmethoxy)-2-butenyl](phenylmethyl)amino]carbonyl]-,  
[1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (Z)]- (9CI) (CA INDEX NAME)

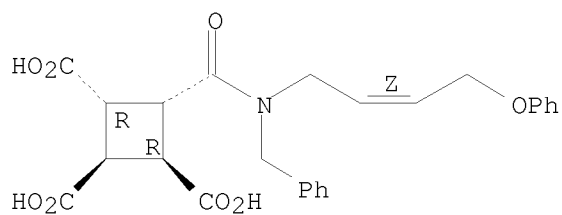
Relative stereochemistry.  
Double bond geometry as shown.



RN 184228-29-3 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-phenoxy-2-butenyl](phenylmethyl)amino]carbonyl]-,  
[1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (Z)]- (9CI) (CA INDEX NAME)

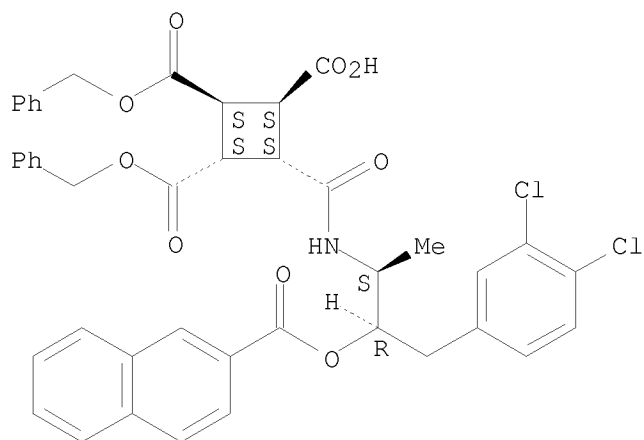
Relative stereochemistry.  
Double bond geometry as shown.





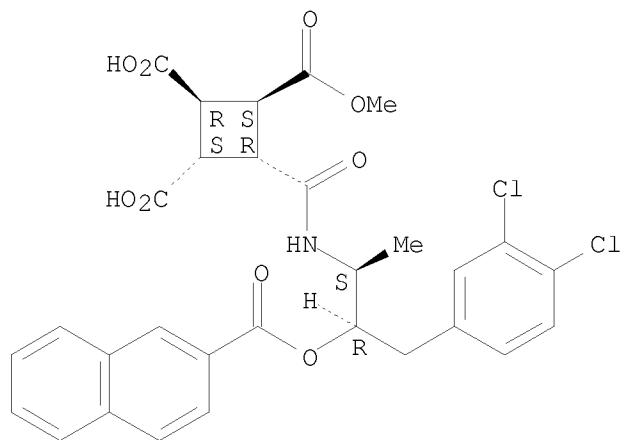
RN 184228-30-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1,2-bis(phenylmethyl)  
 ester, (1S,2S,3S,4S)- (CA INDEX NAME)

Absolute stereochemistry.



RN 184228-31-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1S,2R,3S,4R)- (CA INDEX NAME)

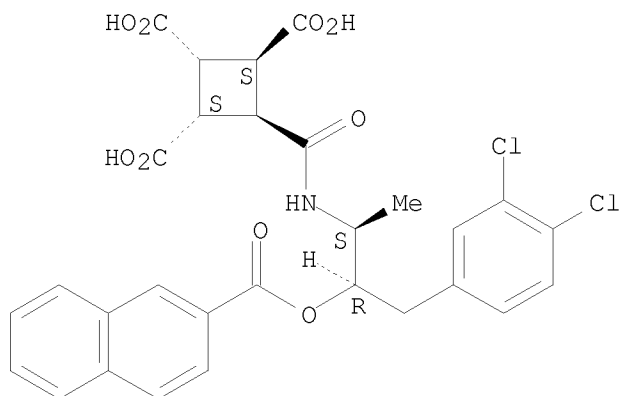
Absolute stereochemistry.



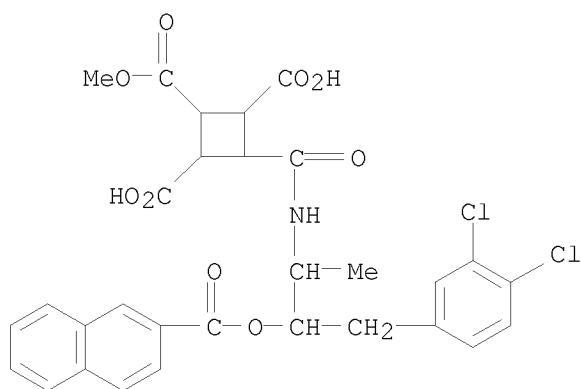
RN 184228-32-8 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-,  
[1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (1R\*,2S\*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

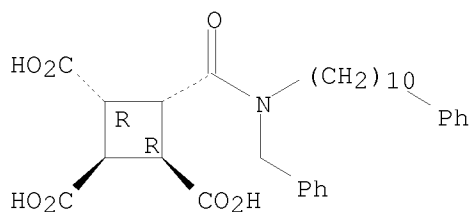


RN 184228-39-5 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 2-methyl ester,  
stereoisomer (9CI) (CA INDEX NAME)



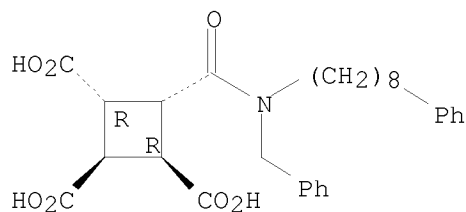
RN 184228-45-3 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(10-phenyldecyl) (phenylmethyl) amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



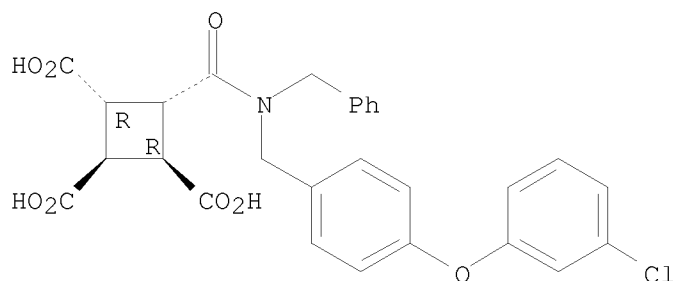
RN 184228-48-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(phenylmethyl)(8-phenyloctyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



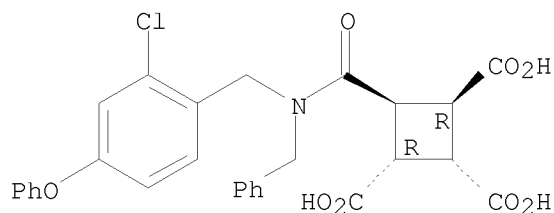
RN 184228-54-4 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[[4-(3-chlorophenoxy)phenyl]methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



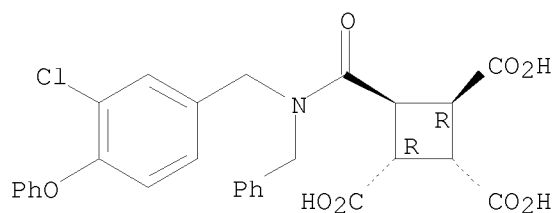
RN 184228-57-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(2-chloro-4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



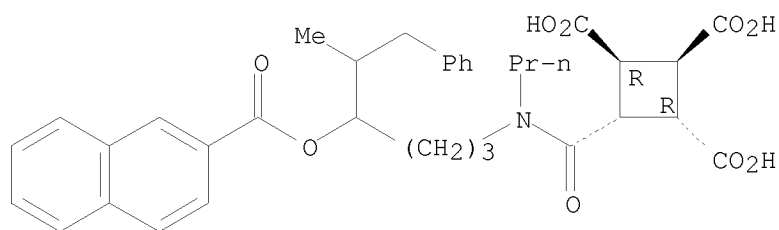
RN 184228-60-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(3-chloro-4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



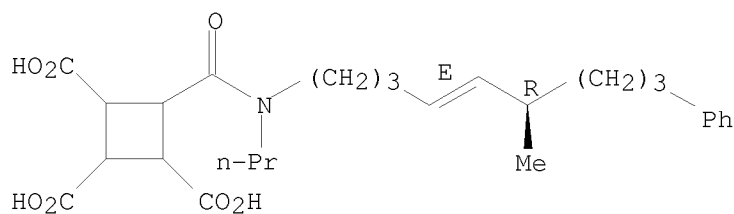
RN 184228-67-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[5-methyl-4-[(2-naphthalenylcarbonyl)oxy]-6-phenylhexyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-[partial]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



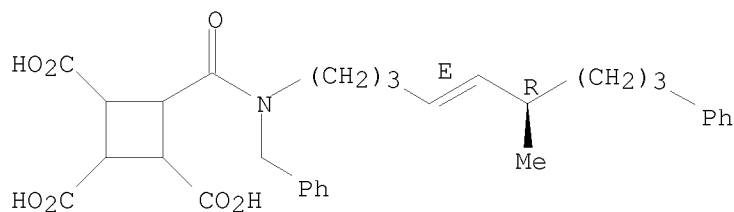
RN 184228-69-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[6-methyl-9-phenyl-4-nonenyl]propylamino]carbonyl]-,  
 (4E,6R)-[partial]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.



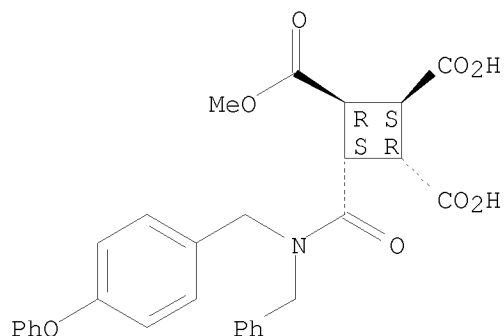
RN 184228-71-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[6-methyl-9-phenyl-4-nonenyl] (phenylmethyl) amino]carbonyl]-,  
 (4E,6R)-[partial]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.



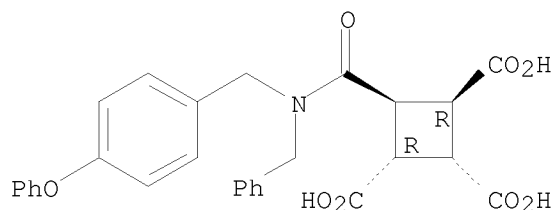
RN 184487-96-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1-methyl  
 ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



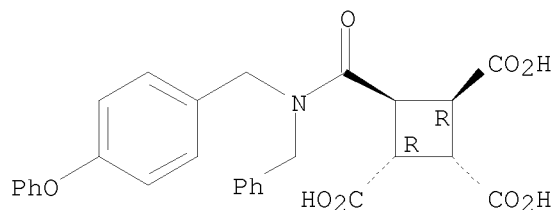
RN 184487-97-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(-)- (9CI) (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.



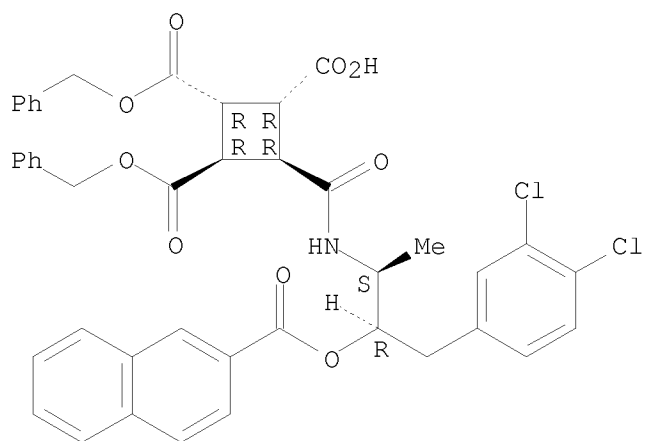
RN 184487-98-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(+)- (9CI) (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.



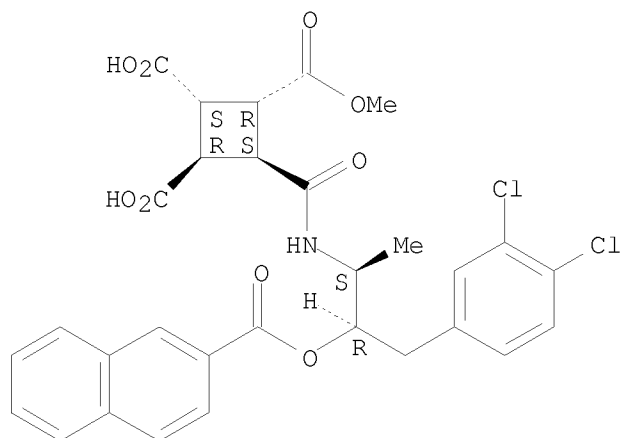
RN 184487-99-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1,2-bis(phenylmethyl)  
 ester, (1R,2R,3R,4R)- (CA INDEX NAME)

Absolute stereochemistry.



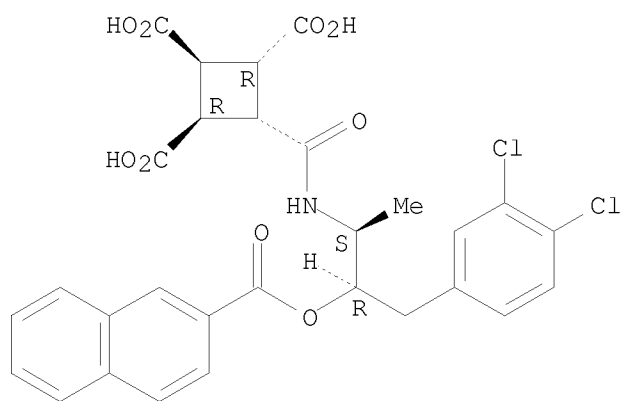
RN 184488-00-4 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1R,2S,3R,4S)- (CA INDEX NAME)

Absolute stereochemistry.



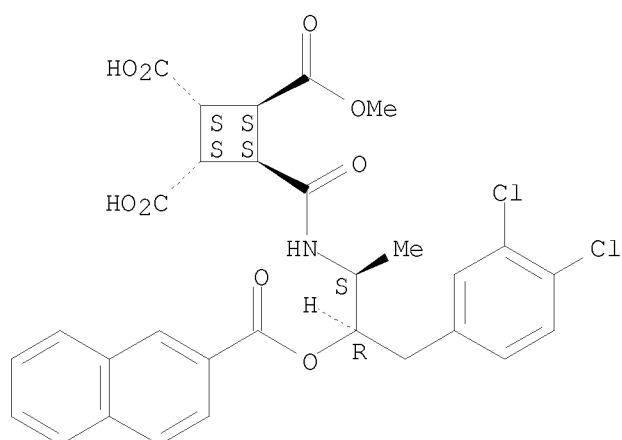
RN 184488-01-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-,  
 [1R-[1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (1S\*,2R\*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

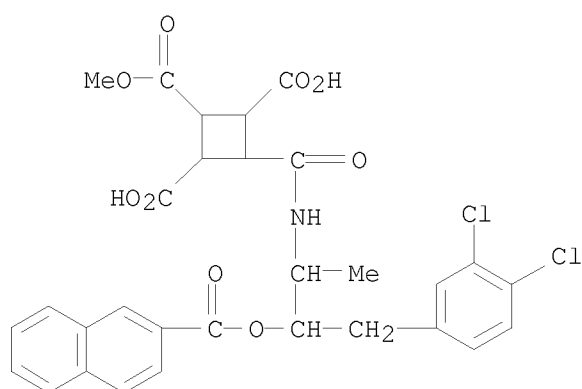


RN 184488-02-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1S,2S,3S,4S)- (CA INDEX NAME)

Absolute stereochemistry.

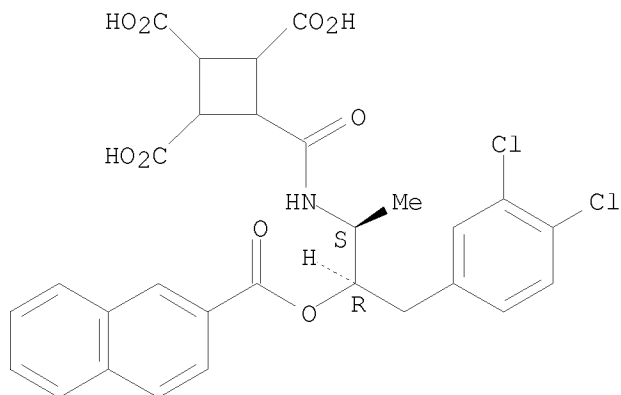


RN 184488-03-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 2-methyl ester,  
 stereoisomer (9CI) (CA INDEX NAME)



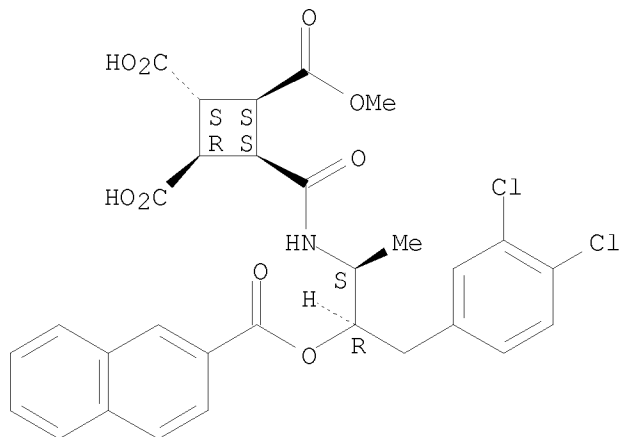
RN 184488-04-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, [4(1S,2R)]-[partial]-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.



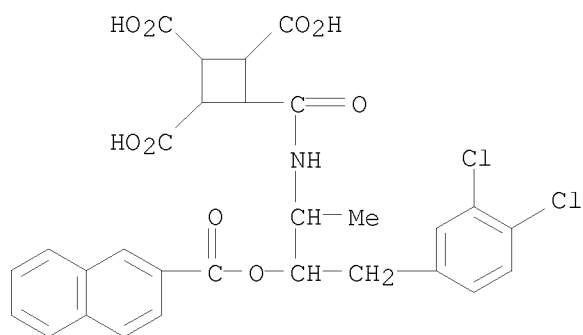
RN 184488-05-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1S,2S,3R,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

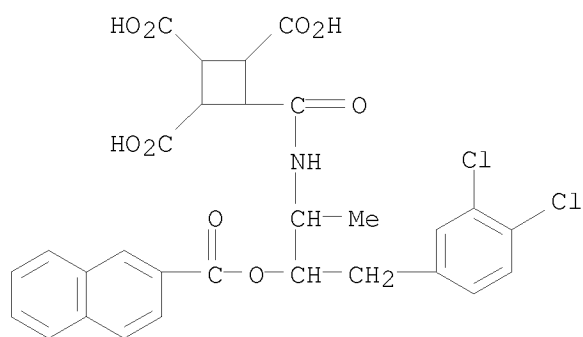


RN 184488-06-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, stereoisomer (9CI) (CA  
 INDEX NAME)



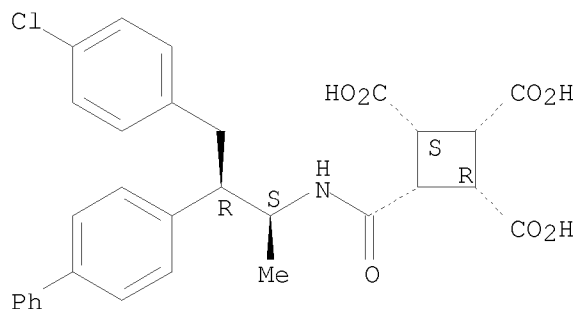


RN 184488-07-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, stereoisomer (9CI) (CA INDEX NAME)



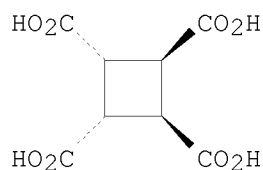
RN 215372-16-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-2-[1,1'-biphenyl]-4-yl-3-(4-chlorophenyl)-1-methylpropyl]amino]carbonyl]-, (1R,2 $\alpha$ ,3S,4 $\alpha$ )- (CA INDEX NAME)

Absolute stereochemistry.



IT 38841-00-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of cyclobutane-derivative inhibitors of squalene synthase and protein farnesyl transferase)  
 RN 38841-00-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



IT 169943-15-1P 184228-80-6P 184228-81-7P  
184228-82-8P 184228-88-4P 184228-89-5P  
184229-04-7P 184229-11-6P 184229-12-7P  
184229-13-8P 184229-17-2P 184488-11-7P  
184488-12-8P

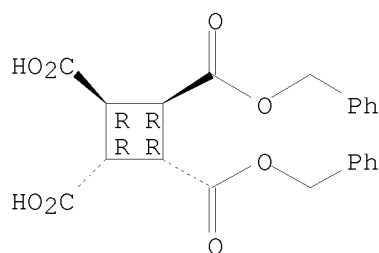
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(preparation of cyclobutane-derivative inhibitors of squalene synthase and  
protein farnesyl transferase)

RN 169943-15-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester,  
(1R,2R,3R,4R)-rel- (CA INDEX NAME)

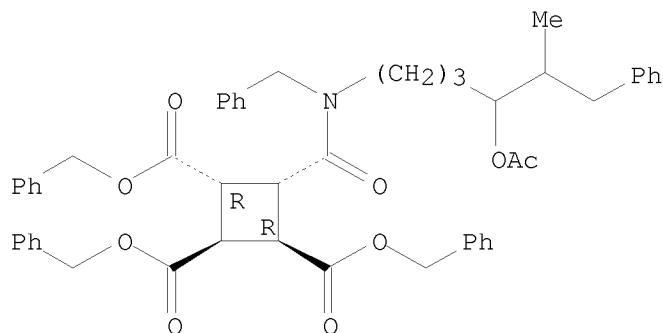
Relative stereochemistry.



RN 184228-80-6 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(acetyloxy)-5-methyl-6-phenylhexyl] (phenylmethyl)amino]carbonyl]-,  
tris(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA  
INDEX NAME)

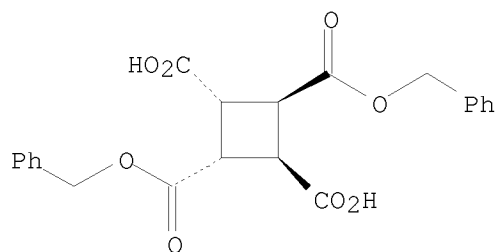
Relative stereochemistry.



RN 184228-81-7 CAPLUS

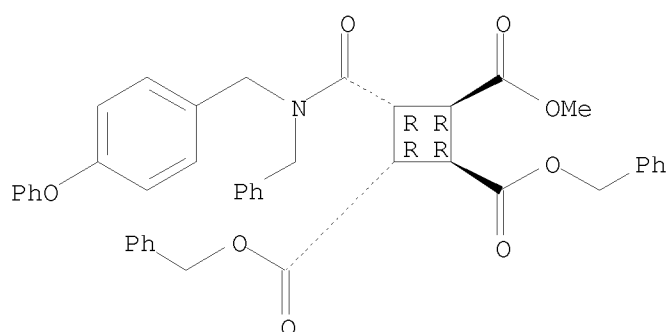
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-bis(phenylmethyl) ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



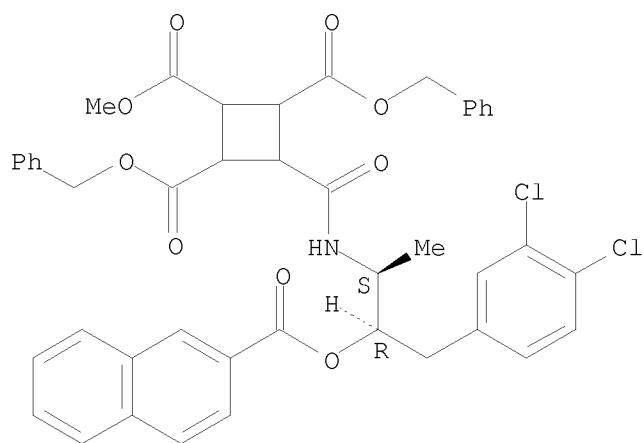
RN 184228-82-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1-methyl  
 2,3-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



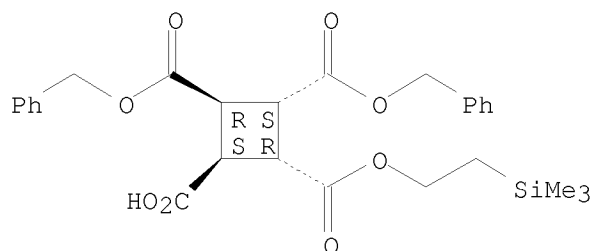
RN 184228-88-4 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 2-methyl  
 1,3-bis(phenylmethyl) ester (CA INDEX NAME)

Absolute stereochemistry.



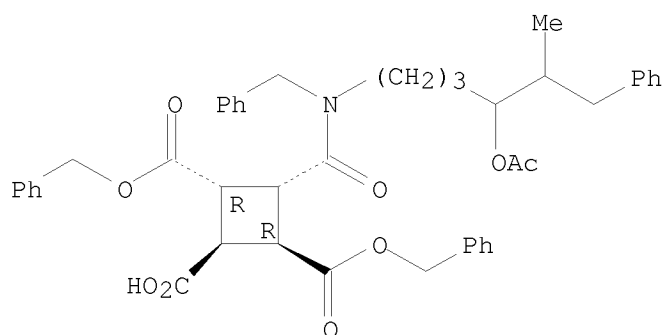
RN 184228-89-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl)  
 3-[2-(trimethylsilyl)ethyl] ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



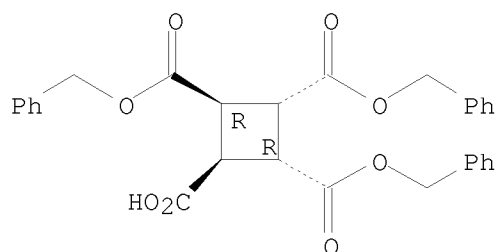
RN 184229-04-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[4-(acetyloxy)-5-methyl-6-phenylhexyl] (phenylmethyl)amino]carbonyl]-,  
 1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-[partial]-  
 (9CI) (CA INDEX NAME)

Relative stereochemistry.



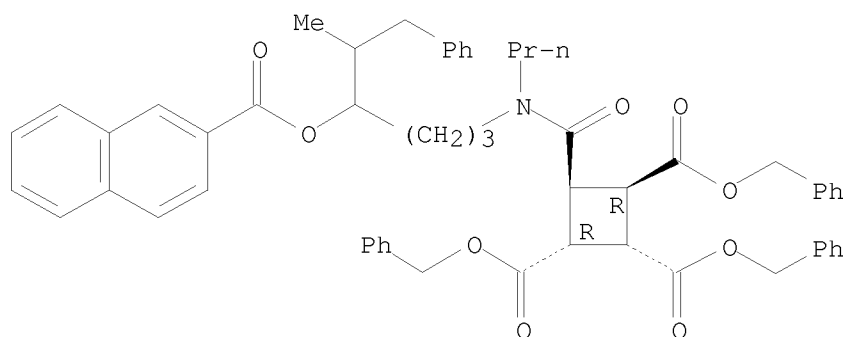
RN 184229-11-6 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tris(phenylmethyl) ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 184229-12-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[5-methyl-4-[(2-naphthalenylcarbonyl)oxy]-6-phenylhexyl]propylamino]carbonyl]-, tris(phenylmethyl) ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

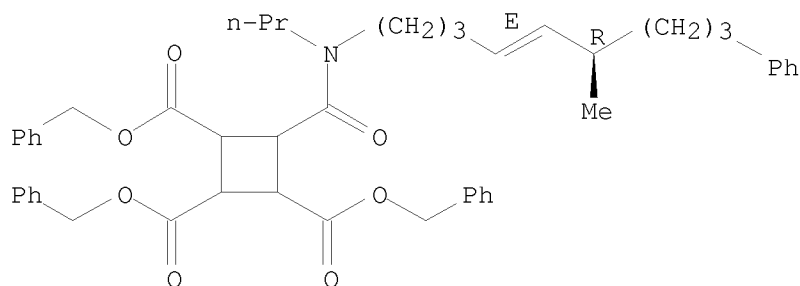
Relative stereochemistry.



RN 184229-13-8 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4E,6R)-6-methyl-9-phenyl-4-nonenyl]propylamino]carbonyl]-,  
tris(phenylmethyl) ester (9CI) (CA INDEX NAME)

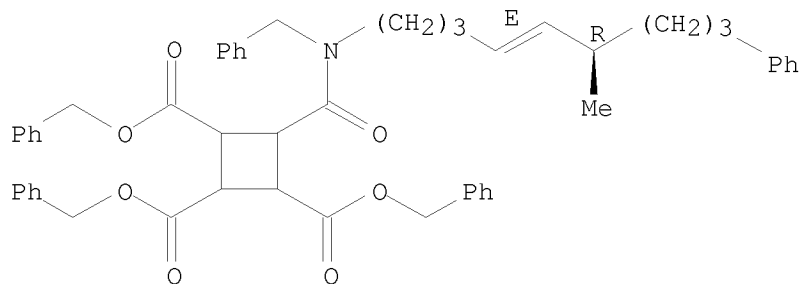
Absolute stereochemistry.  
Double bond geometry as shown.



RN 184229-17-2 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4E,6R)-6-methyl-9-phenyl-4-nonenyl](phenylmethyl)amino]carbonyl]-,  
tris(phenylmethyl) ester (9CI) (CA INDEX NAME)

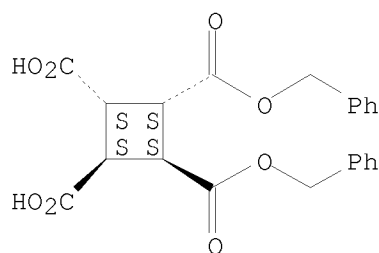
Absolute stereochemistry.  
Double bond geometry as shown.



RN 184488-11-7 CAPLUS

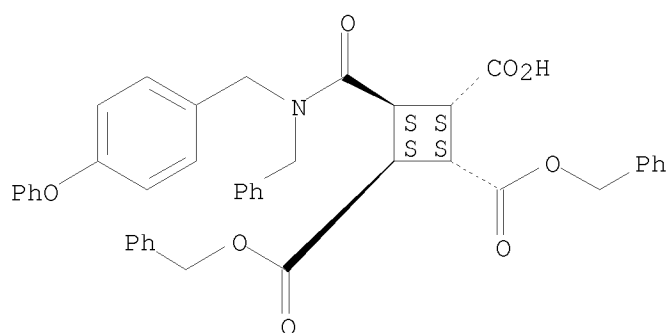
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester,  
(1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.



RN 184488-12-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel-(-)-(9CI) (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 56 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:502539 CAPLUS

DOCUMENT NUMBER: 129:135923

ORIGINAL REFERENCE NO.: 129:27793a,27796a

TITLE: Cyclobutane derivatives as inhibitors of squalene synthetase and protein farnesyltransferase

INVENTOR(S): Baker, William R.; Rosenberg, Saul H.; Fung, Anthony K. L.; Rockway, Todd W.; Fakhoury, Stephen A.; Garvey, David S.; Donner, B. Gregory; O'Connor, Stephen J.; Prasad, Rajnandan N.; Shen, Wang; Stout, David M.; Sullivan, Gerard M.

PATENT ASSIGNEE(S): Abbott Laboratories, USA

SOURCE: U.S., 103 pp., Cont.-in-part of U.S. Ser. No. 429,095, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

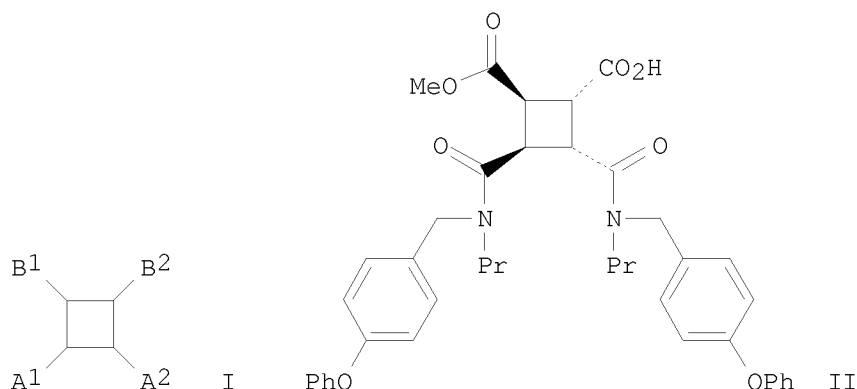
FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5783593	A	19980721	US 1996-633262	19960429
WO 9634851	A1	19961107	WO 1996-US6193	19960502
W: AU, CA, JP, KR, MX				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9656731	A	19961121	AU 1996-56731	19960502
PRIORITY APPLN. INFO.:			US 1993-147708	B2 19931104

US 1994-289711	B2 19940909
US 1994-322783	B2 19941018
US 1995-429095	B2 19950503
US 1996-633262	A 19960429
WO 1996-US6193	W 19960502

OTHER SOURCE(S): MARPAT 129:135923  
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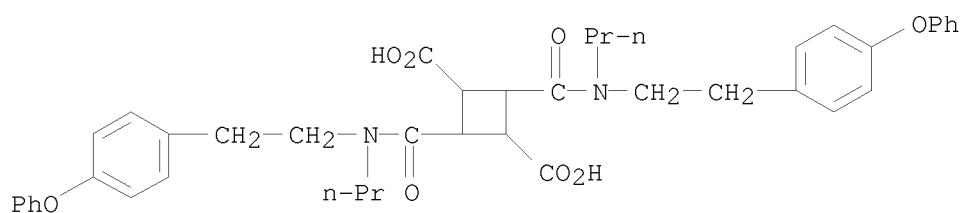


AB The invention provides compds. I [A1, A2 = -XC(O)G, -XC(S)G, -(CH2)<sub>q</sub>NR1R2; X = bond, CH2, O, S, (un)substituted NH; G = R2, NR1R2, OR2, SR2; R1 = H, alkyl, alkenyl, (un)substituted aryl, heterocyclyl, etc.; R2 = alkenyl, (un)substituted aryl, heterocyclyl, etc.; q = 0-2; B1, B2 = CH2OH, CH:NOH, WR3, etc.; W = bond, alkylene, alkenylene, CONH, NHCONH; R3 = various (un)substituted heterocyclic groups or squaric acid residue]. Also disclosed are preparation processes, intermediates, pharmaceutical compns., and treatment of hypercholesterolemic disorders (hyperlipidemia, atherosclerosis), cancer, or fungal infections using the compds. I inhibit biosynthesis of cholesterol (and also fungal growth) by inhibiting squalene synthetase. I also inhibit farnesylation of the oncogene protein Ras by inhibiting protein farnesyltransferase (no data). For example, aminolysis of 1,2,3,4-cyclobutanetetracarboxylic dianhydride with 2 equiv 4-(PhO)C6H4CH2NHPr, followed by monoesterification of the resultant diacid with (R)-(-)-sec-phenethyl alc., separation of one diastereomer, hydrogenolytic deesterification to a single diacid enantiomer, diesterification of this with diazomethane, and partial hydrolysis with LiOH, gave claimed title compound (-)-II. A large group of tested compds. I gave 50-99% inhibition of rat liver microsomal squalene synthetase at 10  $\mu$ M in vitro. Approx. 380 synthetic examples (over 185 compds. with data) are given.

IT 169943-31-1P 169943-32-2P 169943-33-3P  
169943-34-4P 169943-35-5P 169943-36-6P  
169943-37-7P 169943-38-8P 169943-39-9P  
RL: BYP (Byproduct); PREP (Preparation)  
(byproduct; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

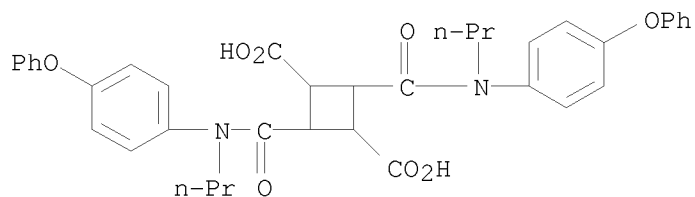
RN 169943-31-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]- (CA INDEX NAME)



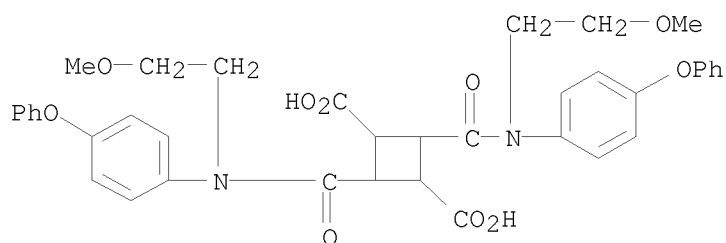
RN 169943-32-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)propylamino]carbonyl]- (CA INDEX NAME)



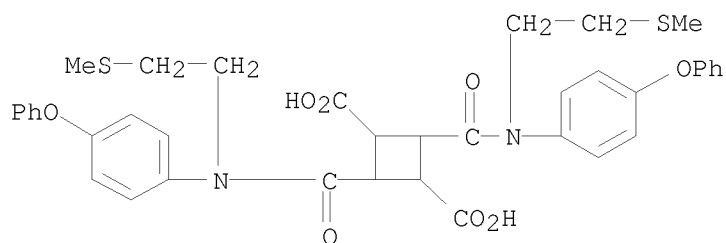
RN 169943-33-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-methoxyethyl)(4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)



RN 169943-34-4 CAPLUS

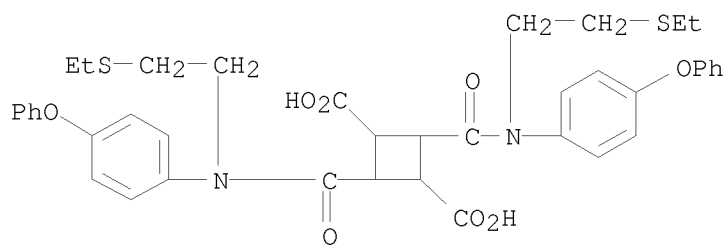
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-methylthio)ethyl](4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)



RN 169943-35-5 CAPLUS

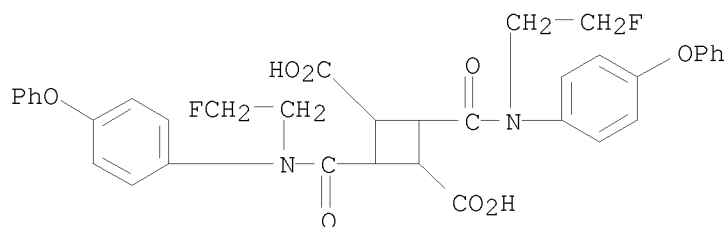
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-ethylthio)ethyl](4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)





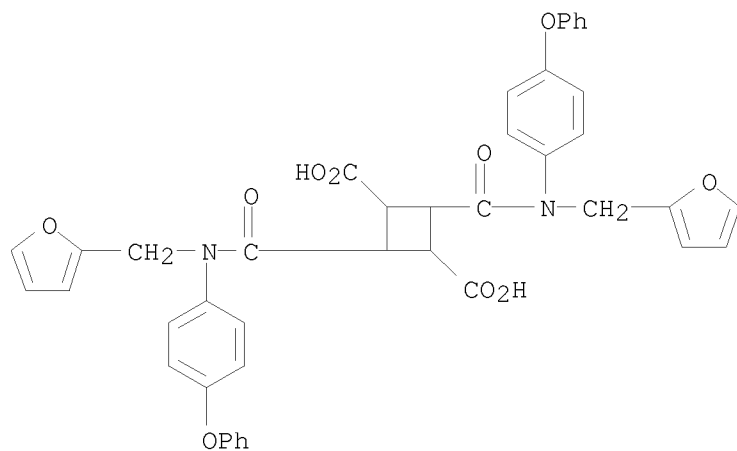
RN 169943-36-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-fluoroethyl)(4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)



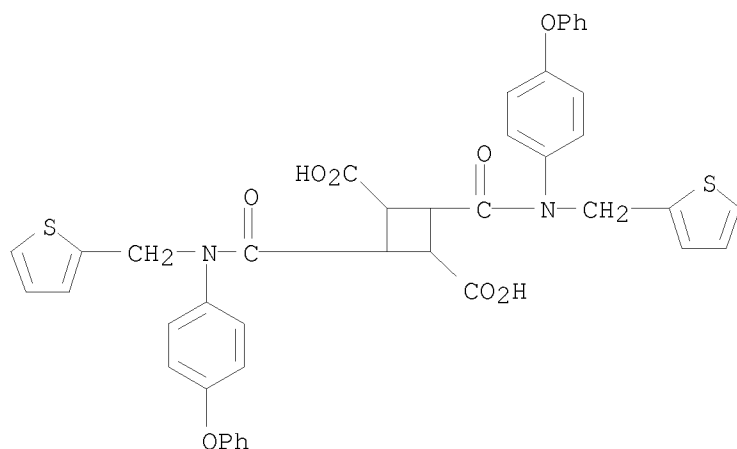
RN 169943-37-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-furanylmethyl)(4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)

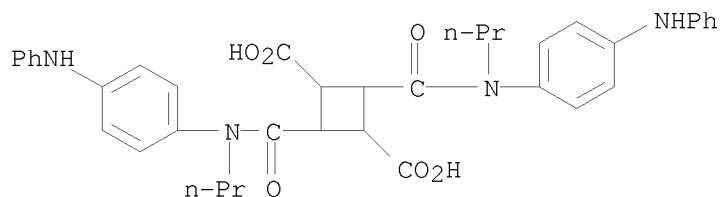


RN 169943-38-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)(2-thienylmethyl)amino]carbonyl]- (CA INDEX NAME)

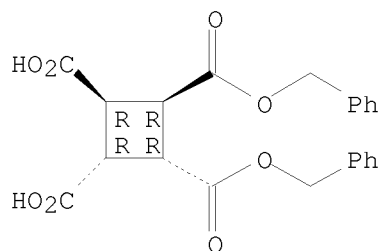


RN 169943-39-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]- (CA INDEX NAME)



IT 169943-15-1P  
 RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)  
 RN 169943-15-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

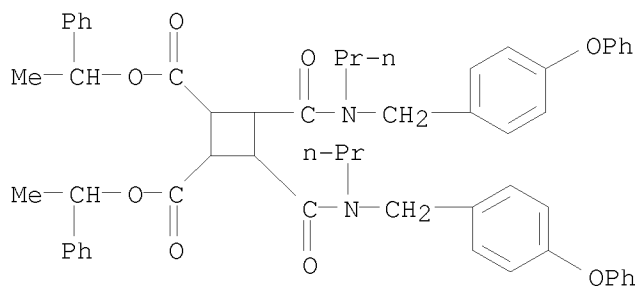


IT 169942-83-0P 169942-84-1P 169942-85-2P  
 169943-03-7P 169943-05-9P 169943-06-0P  
 169943-07-1P 169943-16-2P 170207-72-4P  
 184488-11-7P 185209-95-4P 185209-96-5P  
 185209-98-7P 185210-17-7P 185210-18-8P  
 185254-81-3P 185254-82-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

synthetase and protein farnesyltransferase)

RN 169942-83-0 CAPLUS

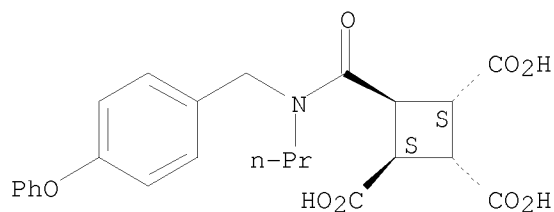
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis(1-phenylethyl) ester  
(CA INDEX NAME)



RN 169942-84-1 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid, 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

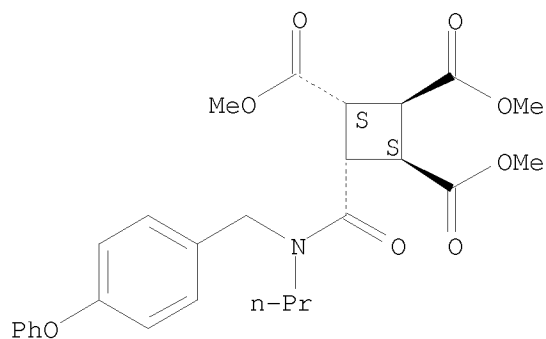
Relative stereochemistry.



RN 169942-85-2 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid, 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, trimethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

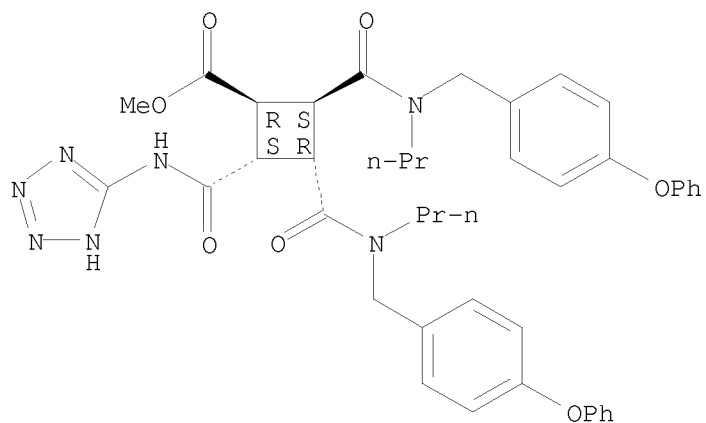
Relative stereochemistry.



RN 169943-03-7 CAPLUS

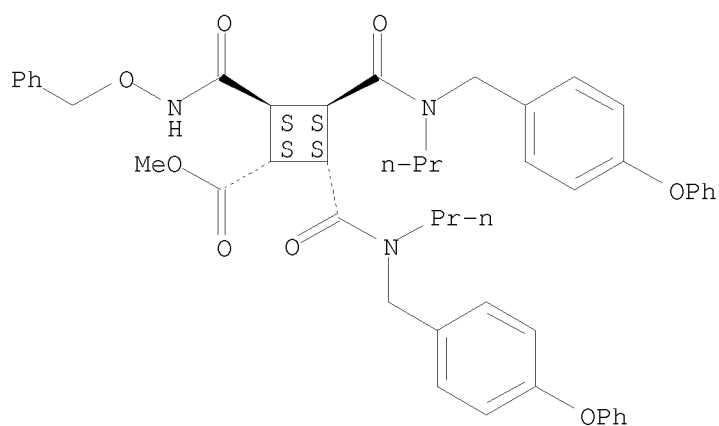
CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[(1H-tetrazol-5-ylamino)carbonyl]-, methyl ester, (1R,2S,3R,4S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



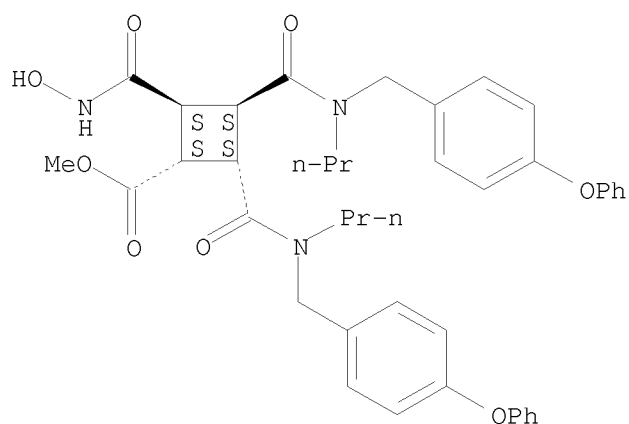
RN 169943-05-9 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[[[(phenylmethoxy)amino]carbonyl]-, methyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169943-06-0 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[(hydroxyamino)carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, methyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

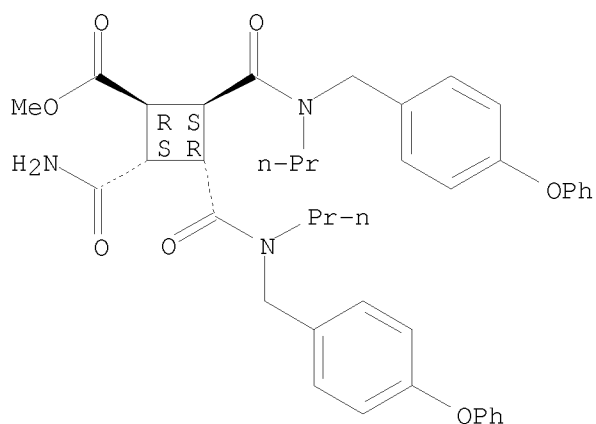
Relative stereochemistry.



RN 169943-07-1 CAPLUS

CN Cyclobutanecarboxylic acid, 2-(aminocarbonyl)-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, methyl ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

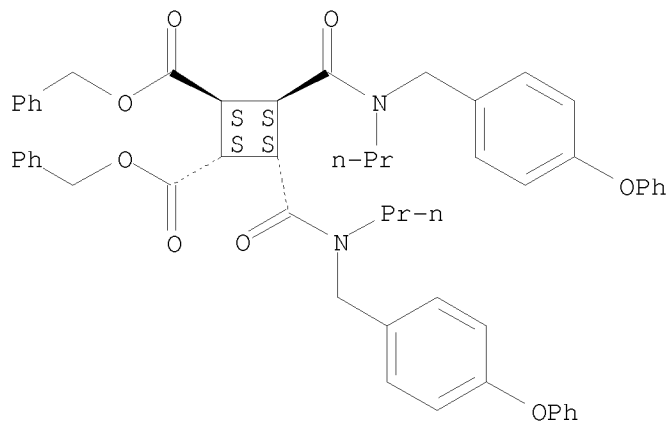
Relative stereochemistry.



RN 169943-16-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

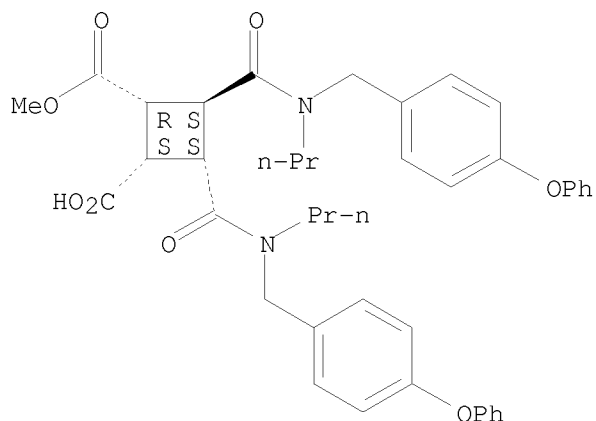
Relative stereochemistry.



RN 170207-72-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1R,2S,3S,4S)-rel- (9CI) (CA INDEX NAME)

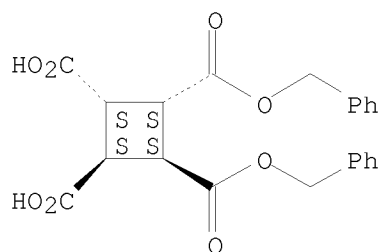
Relative stereochemistry.



RN 184488-11-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

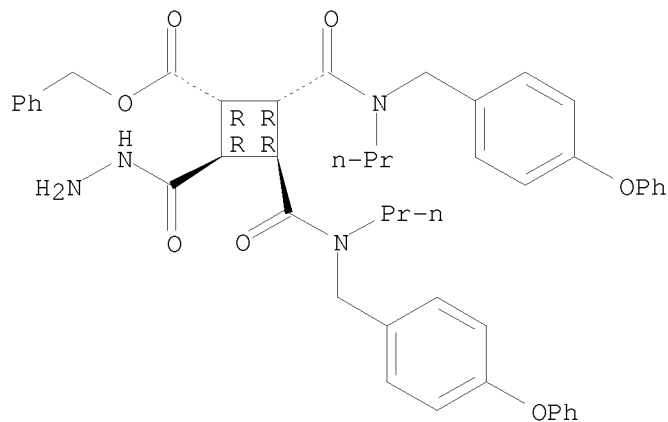
Rotation (+). Absolute stereochemistry unknown.



RN 185209-95-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(phenylmethyl) ester, 2-hydrazide, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

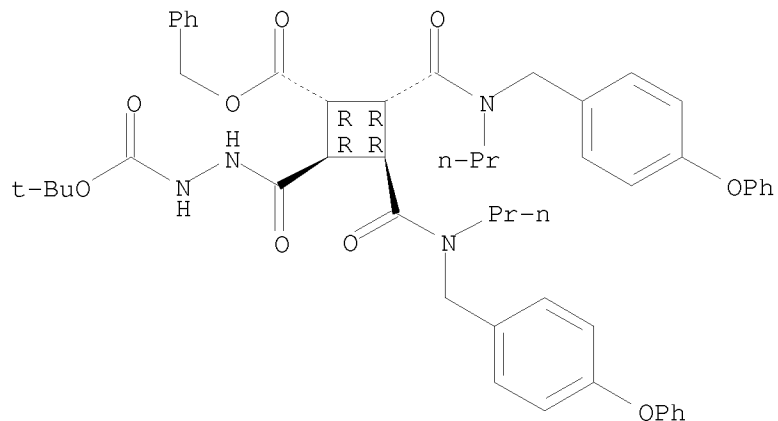
Relative stereochemistry.



RN 185209-96-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(phenylmethyl) ester, 2-[2-[(1,1-dimethylethoxy)carbonyl]hydrazide], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

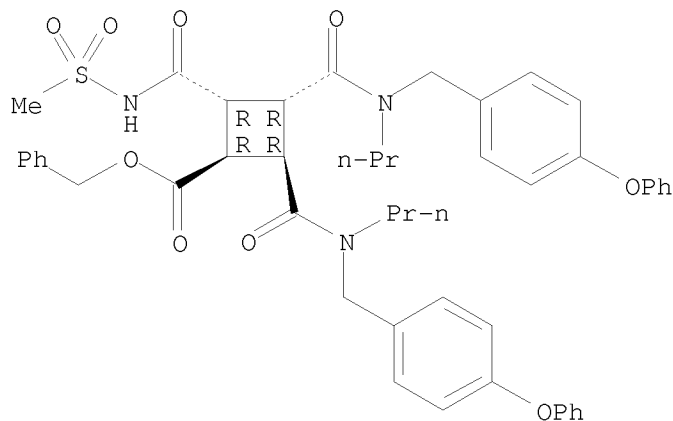
Relative stereochemistry.



RN 185209-98-7 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(methylsulfonyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, phenylmethyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

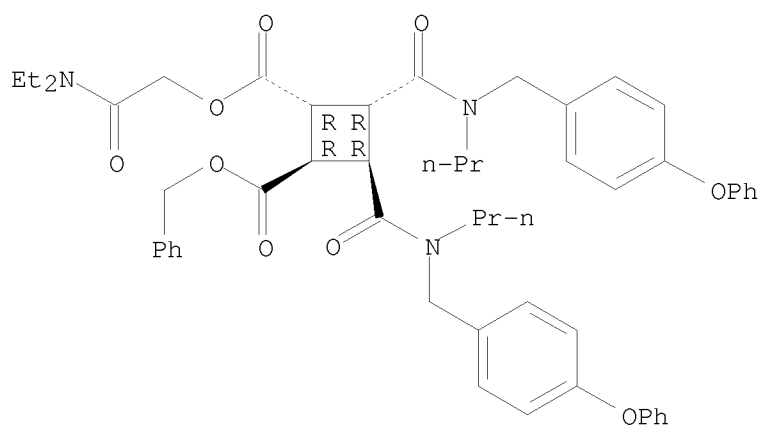
Relative stereochemistry.



RN 185210-17-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[2-(diethylamino)-2-oxoethyl] 2-(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

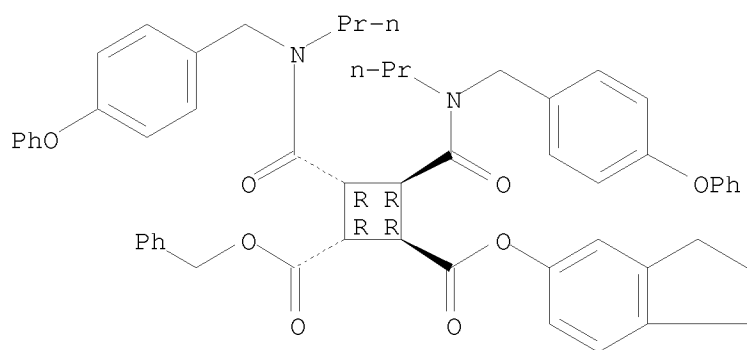
Relative stereochemistry.



RN 185210-18-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(2,3-dihydro-1H-inden-5-yl) 2-(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

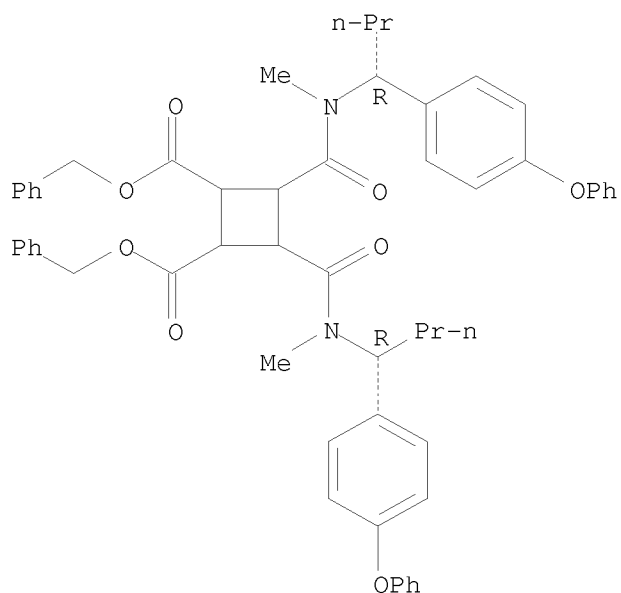


RN 185254-81-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1R)-1-(4-phenoxyphenyl)butyl]amino]carbonyl]-, 1,2-bis(phenylmethyl) ester (CA INDEX NAME)

Absolute stereochemistry.

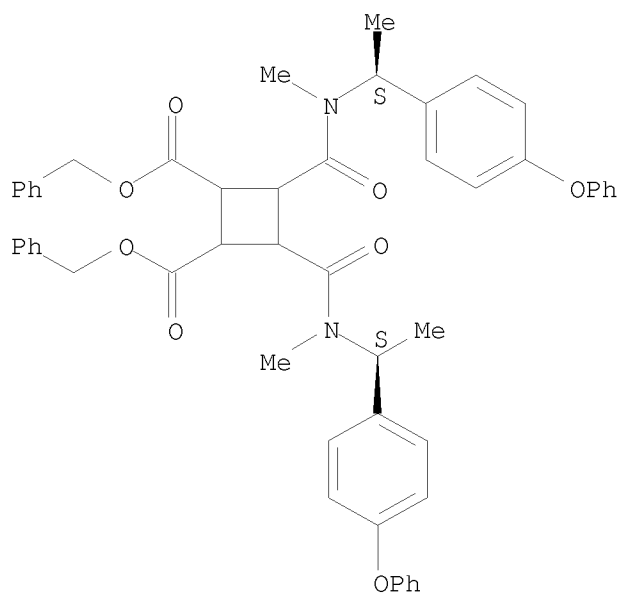




RN 185254-82-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1S)-1-(4-phenoxyphenyl)ethyl]amino]carbonyl]-, 1,2-bis(phenylmethyl) ester (CA INDEX NAME)

Absolute stereochemistry.



IT 169942-55-6P 169942-56-7P 185209-71-6P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

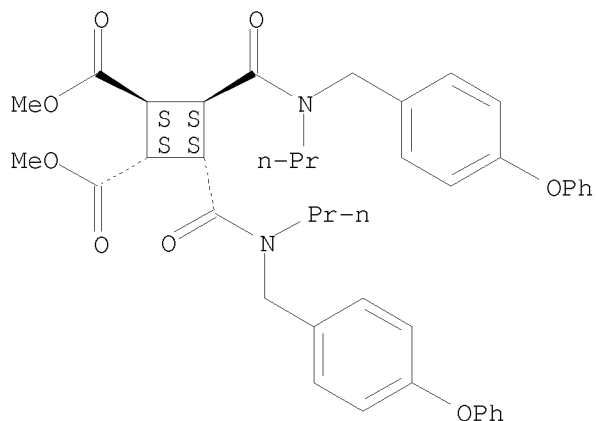
(preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

RN 169942-55-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[methyl[(1S)-1-(4-phenoxyphenyl)ethyl]amino]carbonyl]-, dimethyl ester,

(1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

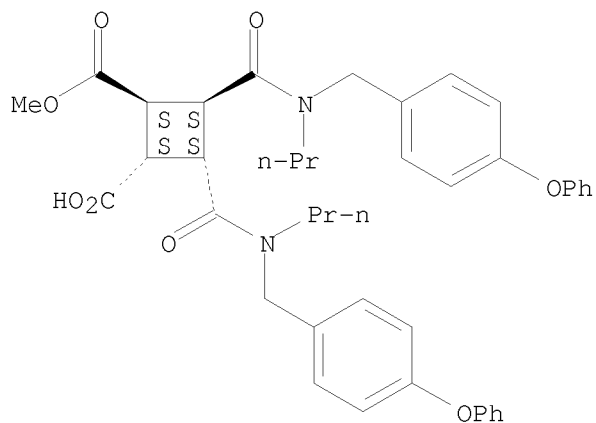
Relative stereochemistry.



RN 169942-56-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl-, monomethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

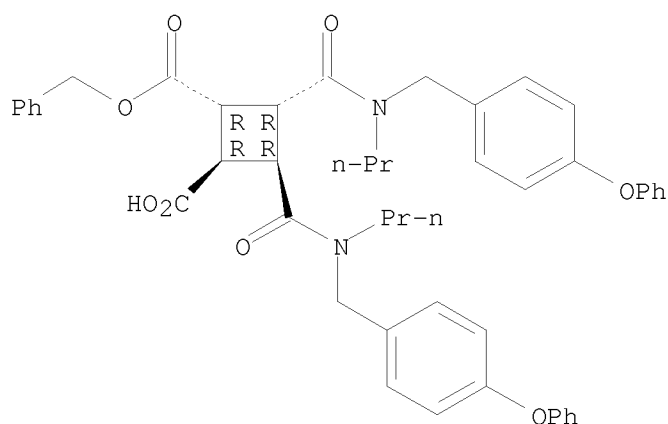
Relative stereochemistry.



RN 185209-71-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl-, 1-(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



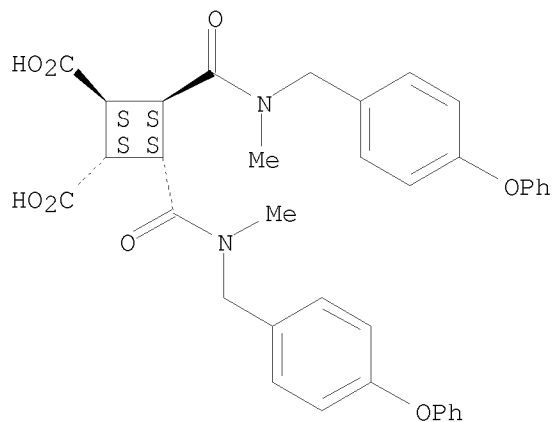
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	169942-27-2P	169942-28-3P	169942-29-4P
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RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

RN 169941-79-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

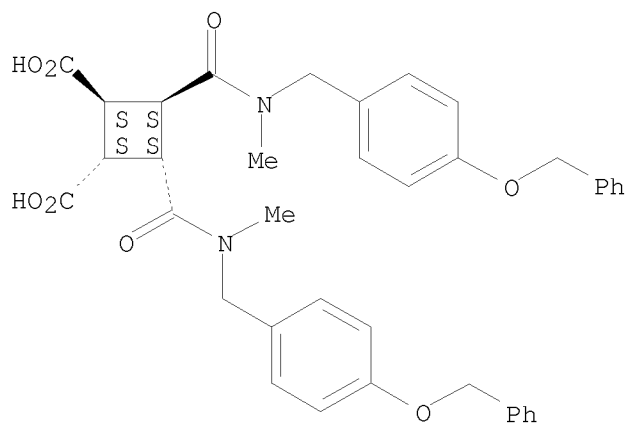
Relative stereochemistry.



RN 169941-80-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[[4-(phenylmethoxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

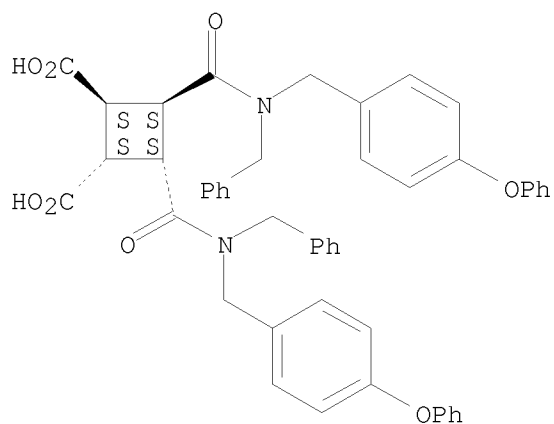
Relative stereochemistry.



RN 169941-81-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

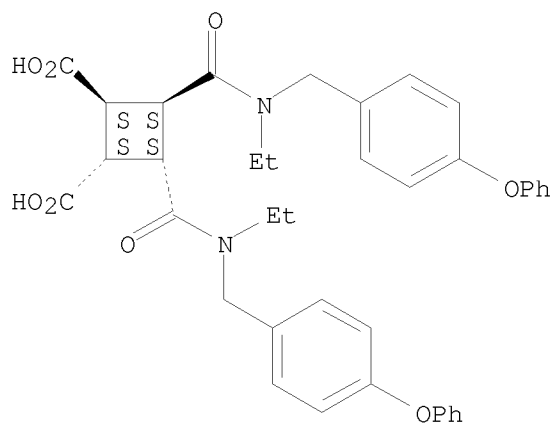
Relative stereochemistry.



RN 169941-82-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ethyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

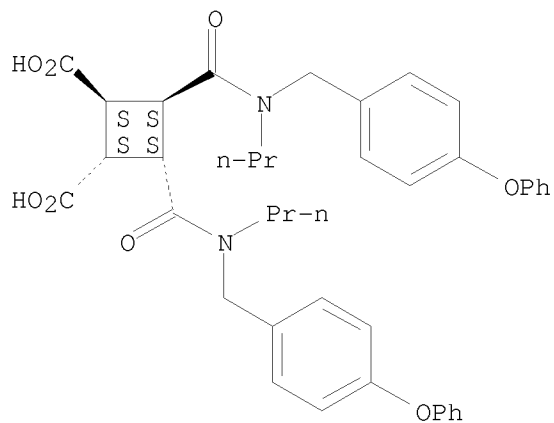
Relative stereochemistry.



RN 169941-83-7 CAPLUS

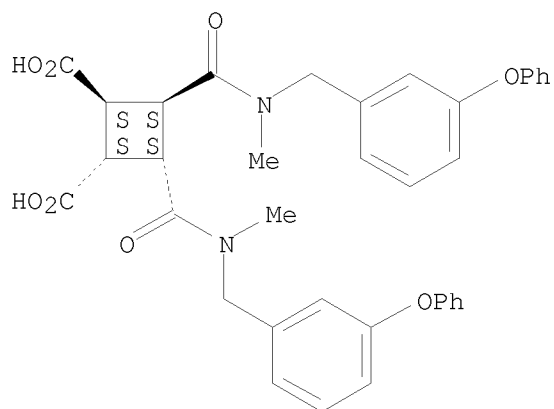
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[ethyl[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



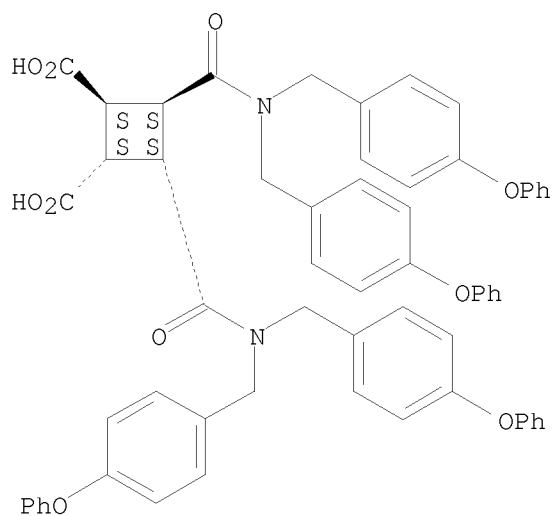
RN 169941-84-8 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(3-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



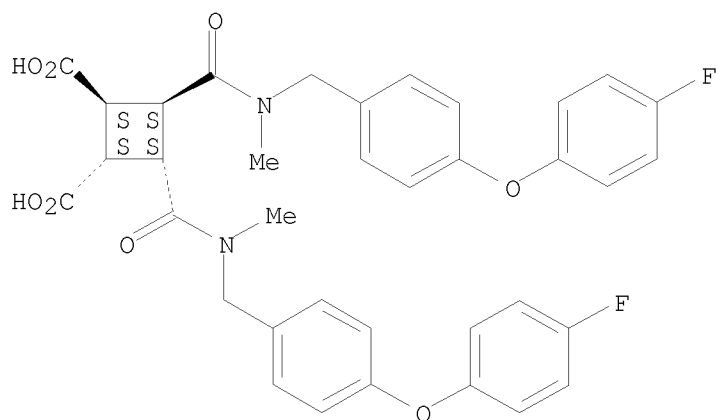
RN 169941-85-9 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169941-86-0 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

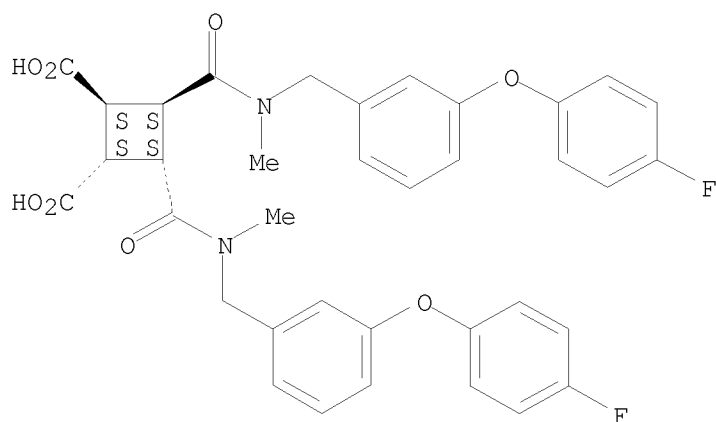
Relative stereochemistry.



RN 169941-87-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[3-(4-fluorophenoxy)phenyl]methylmethylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

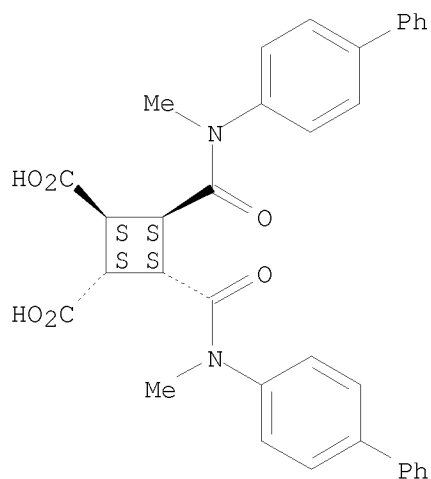
Relative stereochemistry.



RN 169941-88-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[([1,1'-biphenyl]-4-ylmethylamino)carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

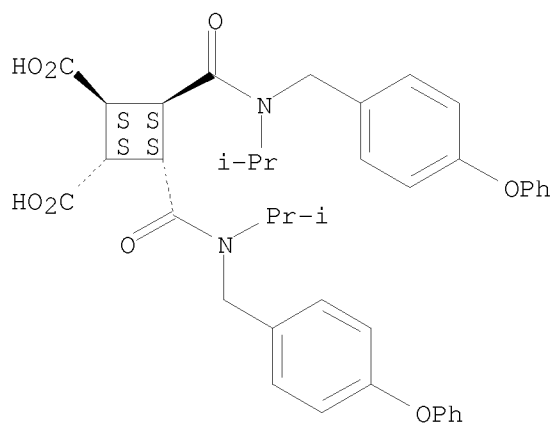
Relative stereochemistry.



RN 169941-89-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(1-methylethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

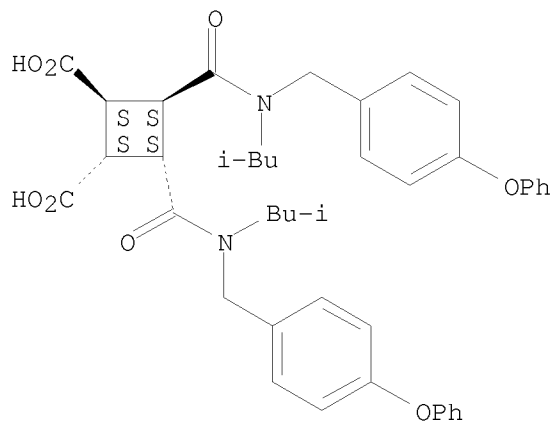
Relative stereochemistry.



RN 169941-90-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-methylpropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

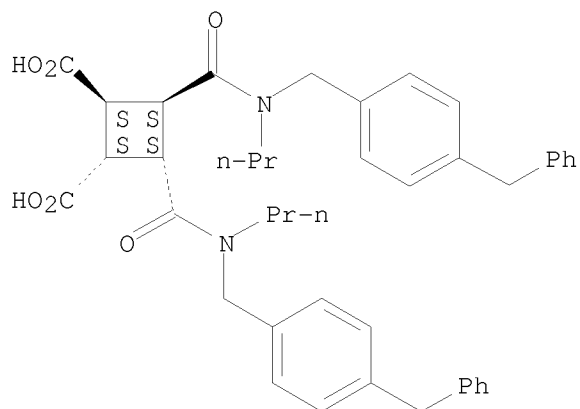




RN 169941-91-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylmethyl)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

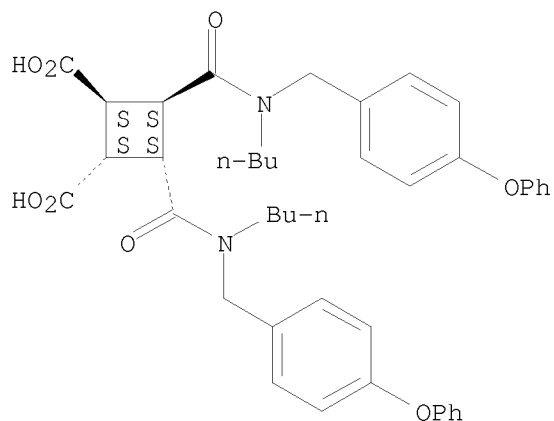
Relative stereochemistry.



RN 169941-92-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

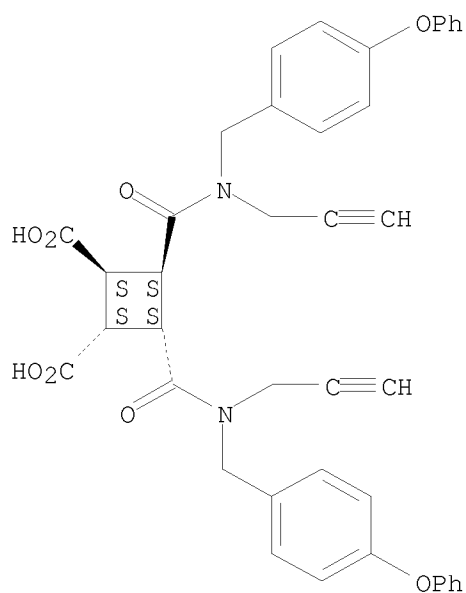
Relative stereochemistry.



RN 169941-93-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]-2-propyn-1-ylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

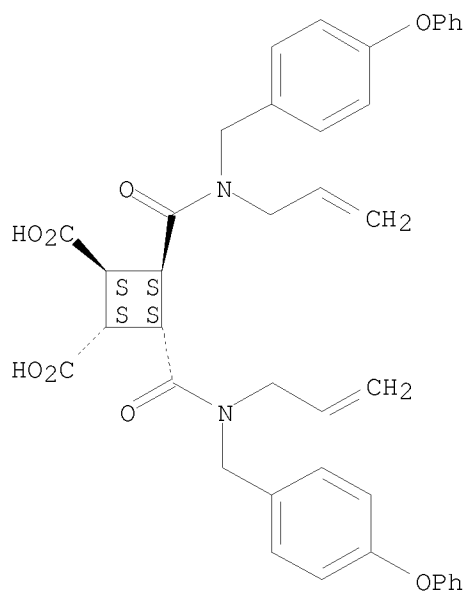
Relative stereochemistry.



RN 169941-94-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]-2-propen-1-ylamino]carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

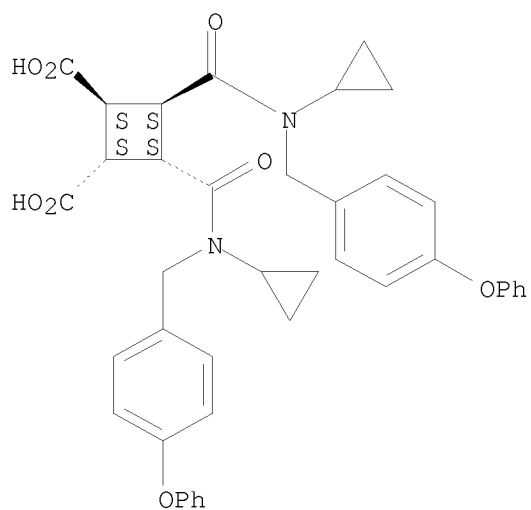
Relative stereochemistry.



RN 169941-95-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopropyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

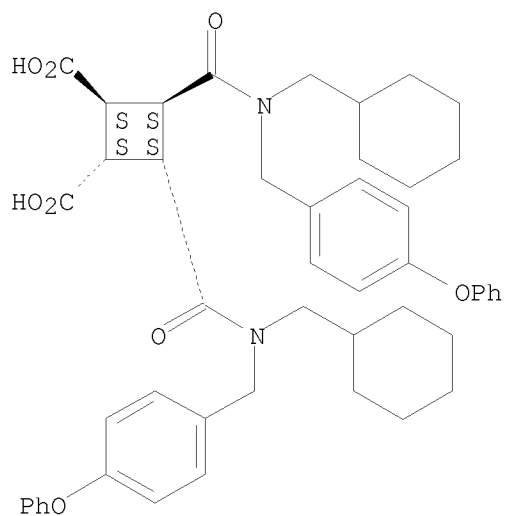
Relative stereochemistry.



RN 169941-96-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(cyclohexylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

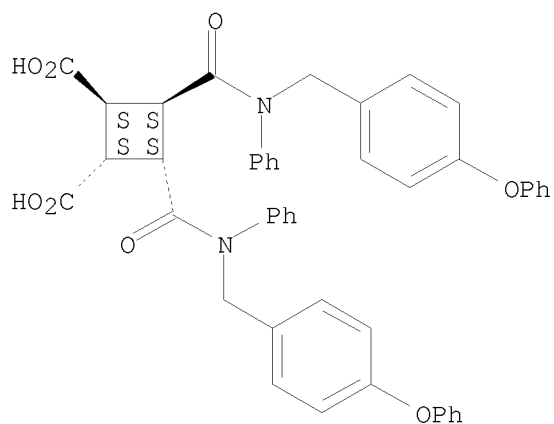
Relative stereochemistry.



RN 169941-97-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]phenylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

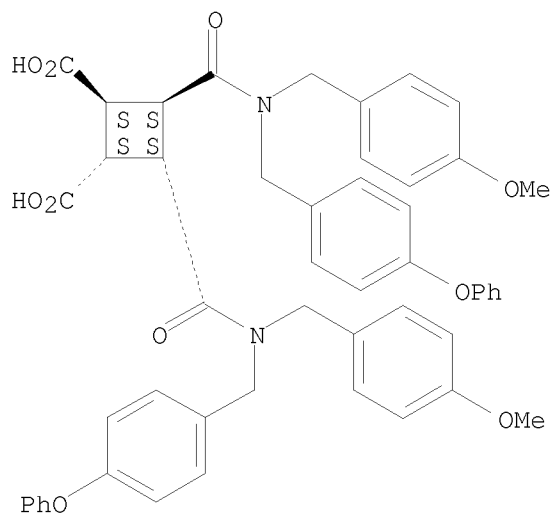
Relative stereochemistry.



RN 169941-98-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-methoxyphenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

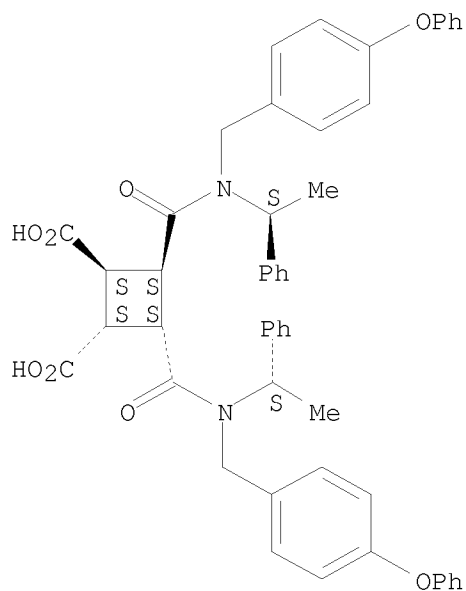
Relative stereochemistry.



RN 169941-99-5 CAPLUS

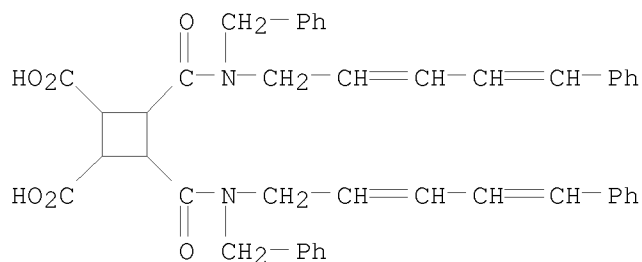
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]-, (1S,2S,3S,4S)- (CA INDEX NAME)

Absolute stereochemistry.



RN 169942-00-1 CAPLUS

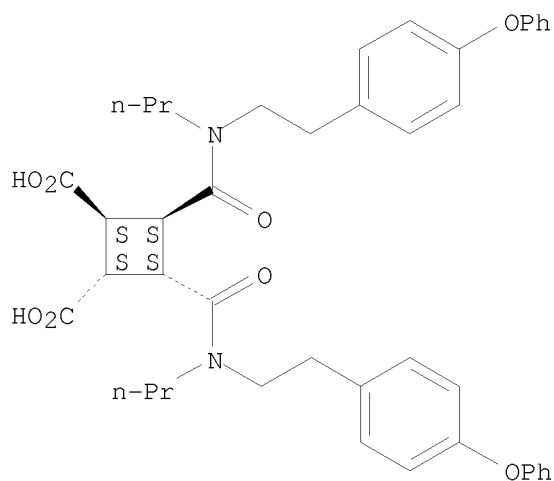
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(phenylmethyl) (5-phenyl-2,4-pentadien-1-yl)amino]carbonyl]- (CA INDEX NAME)



RN 169942-01-2 CAPLUS

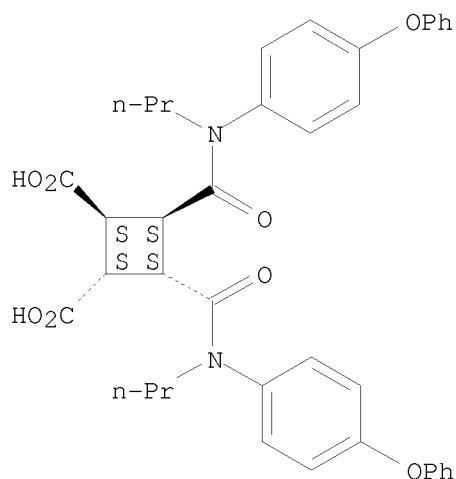
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-(4-phenoxyphenyl)ethyl)propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



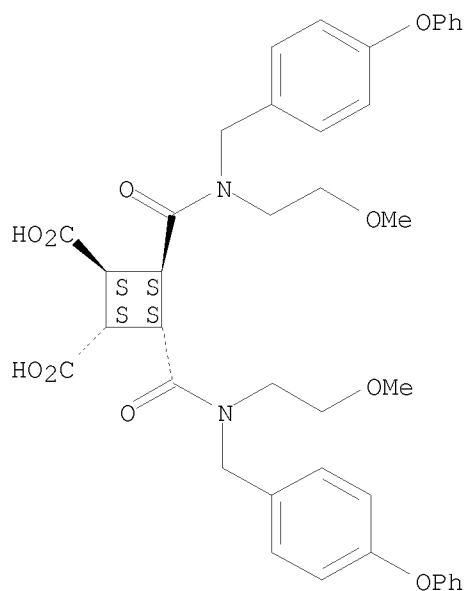
RN 169942-02-3 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ (4-phenoxyphenyl)propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



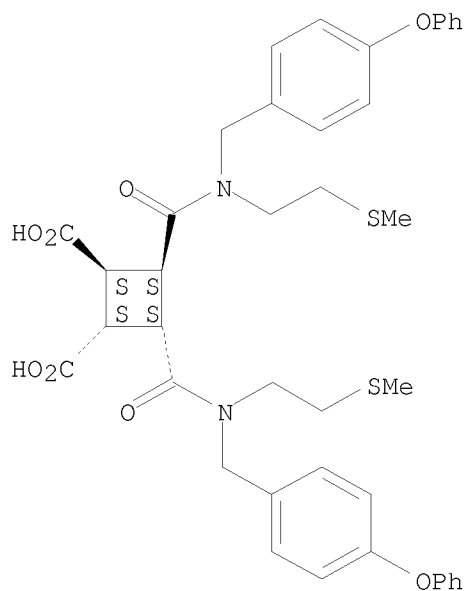
RN 169942-03-4 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ (2-methoxyethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-04-5 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ [2-(methylthio)ethyl] [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

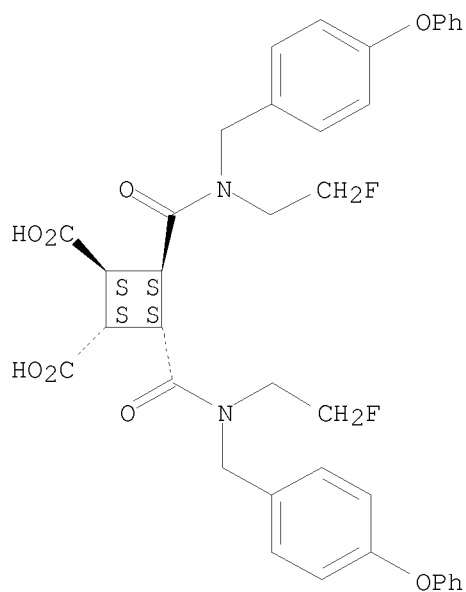
Relative stereochemistry.



RN 169942-05-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-fluoroethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

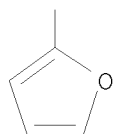
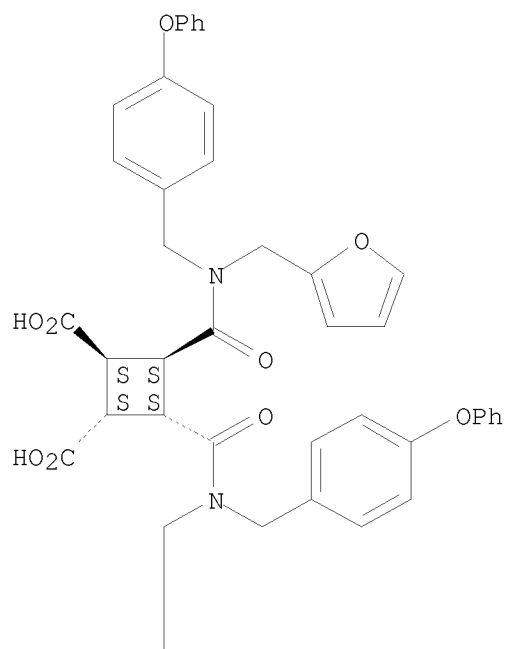
Relative stereochemistry.



RN 169942-06-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-furanylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

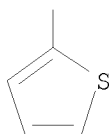
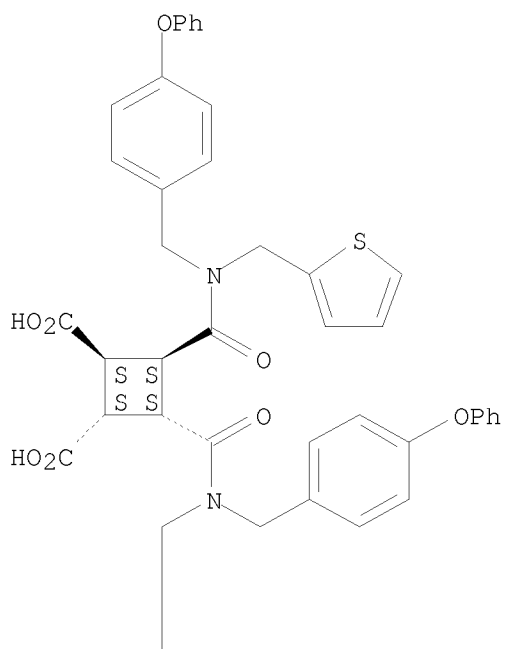
Relative stereochemistry.



RN 169942-07-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

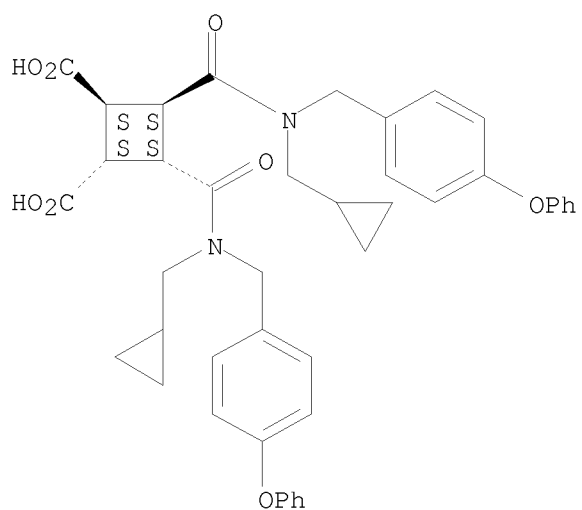




RN 169942-08-9 CAPLUS

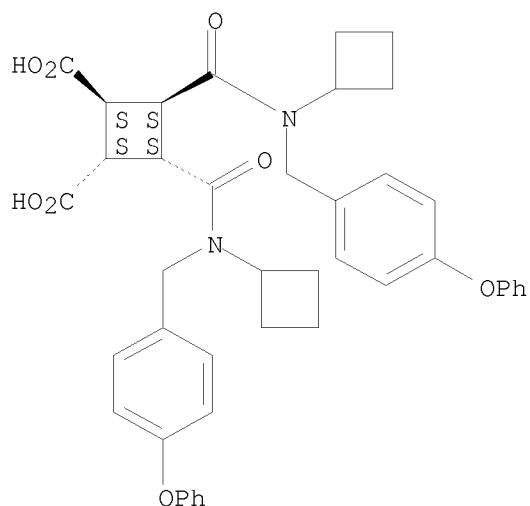
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclopropylmethyl)][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



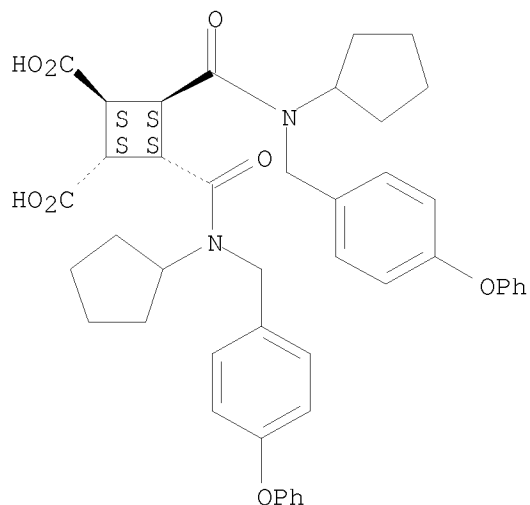
RN 169942-09-0 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclobutyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



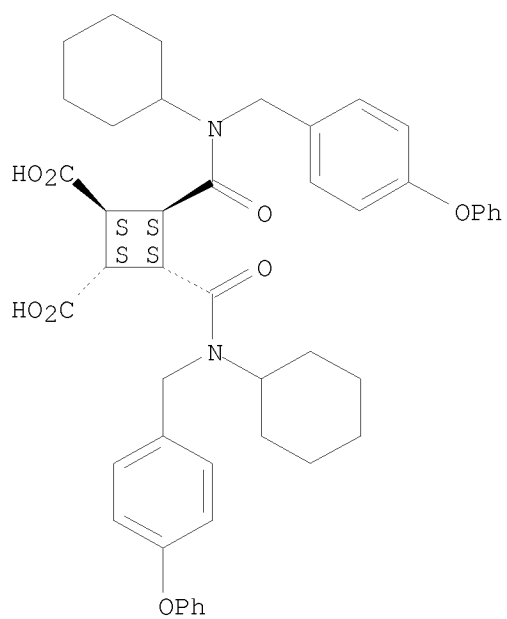
RN 169942-10-3 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-11-4 CAPLUS  
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclohexyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

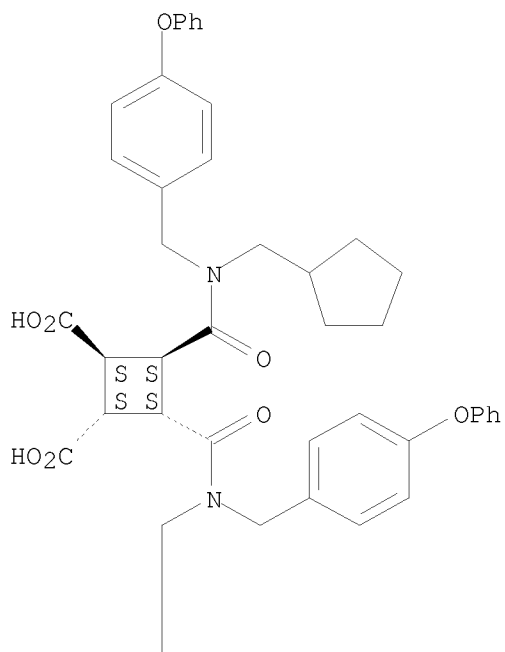


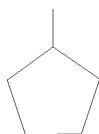
RN 169942-12-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(cyclopentylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

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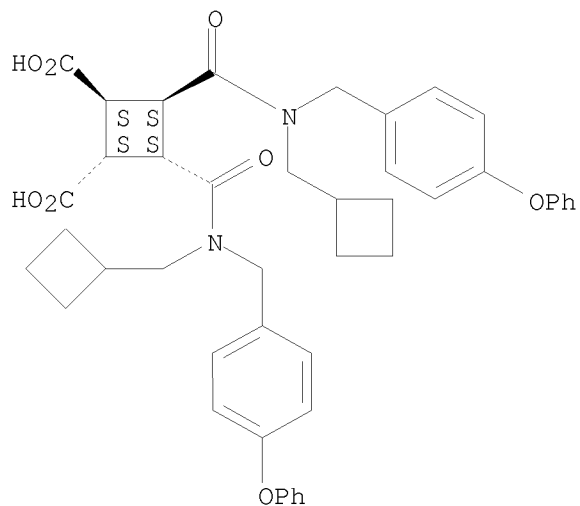




RN 169942-13-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclobutylmethyl)][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

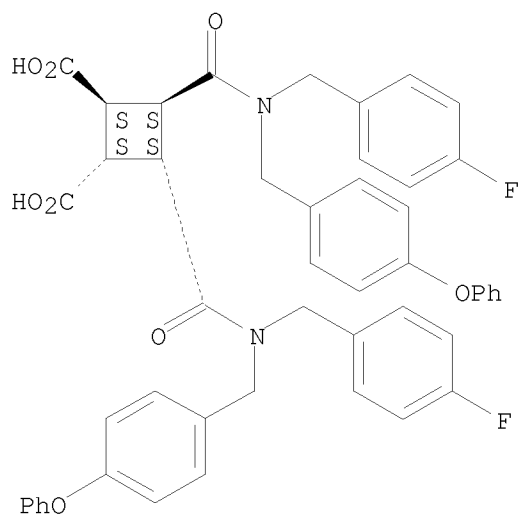
Relative stereochemistry.



RN 169942-14-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-fluorophenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

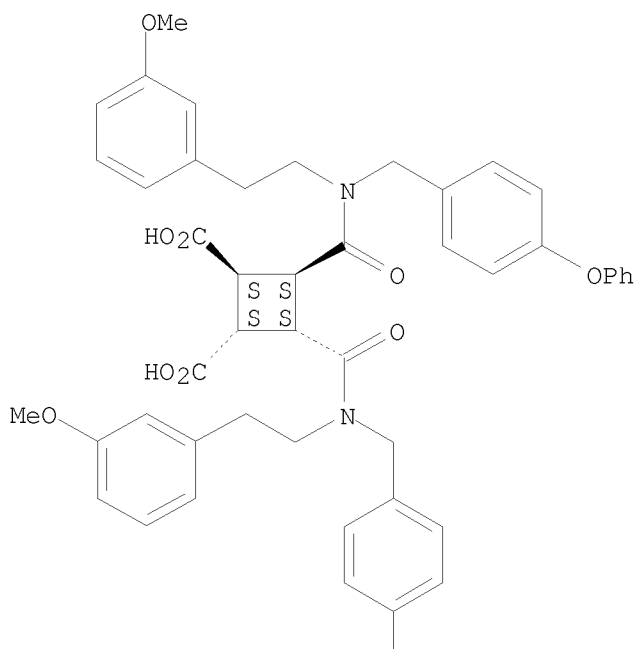


RN 169942-15-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(3-methoxyphenyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

PAGE 1-A

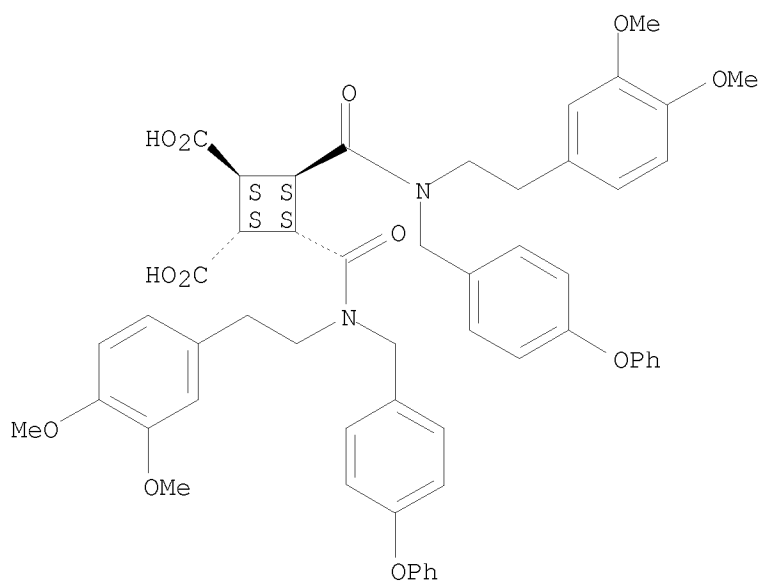


PAGE 2-A



RN 169942-16-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(3,4-dimethoxyphenyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

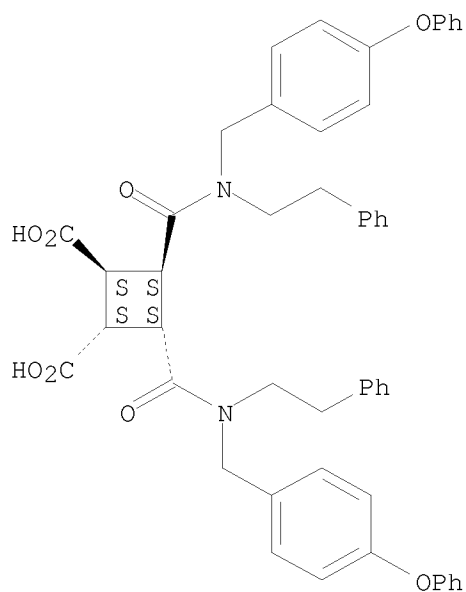
Relative stereochemistry.



RN 169942-17-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl](2-phenoxyethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

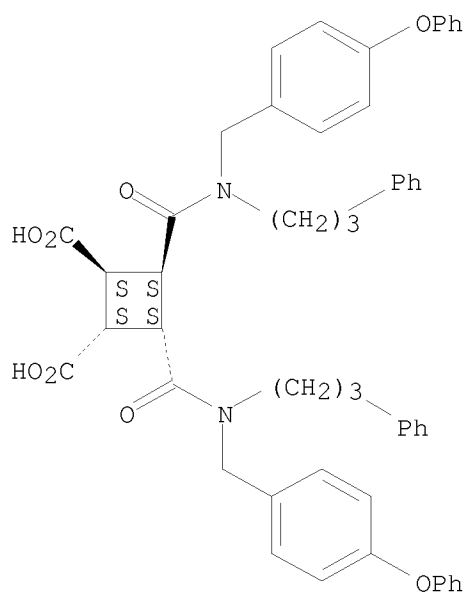
Relative stereochemistry.



RN 169942-18-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl](3-phenylpropyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

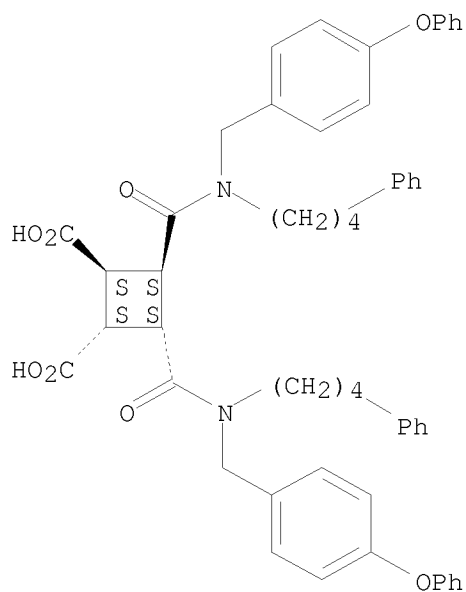
Relative stereochemistry.



RN 169942-19-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl](4-phenylbutyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

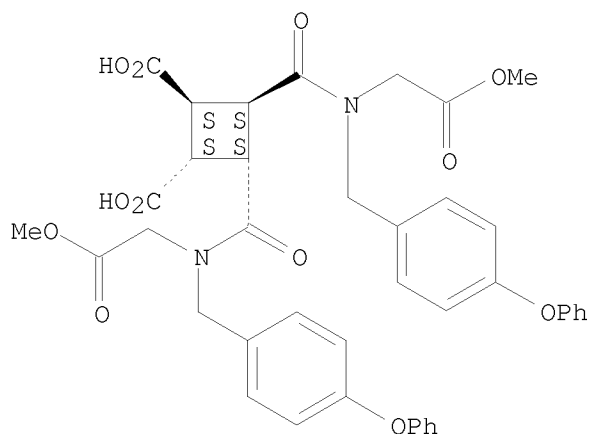
Relative stereochemistry.



RN 169942-20-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-methoxy-2-oxoethyl)(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

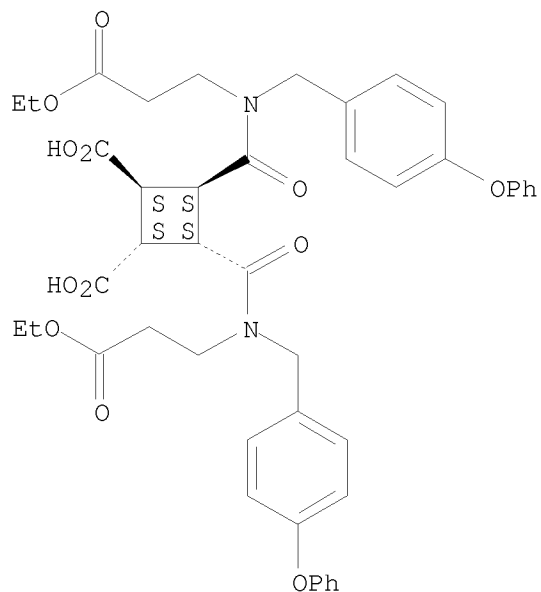
Relative stereochemistry.



RN 169942-21-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(3-ethoxy-3-oxopropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

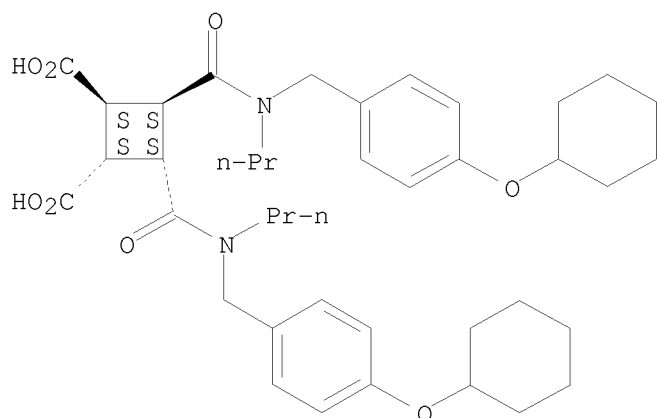


RN 169942-22-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-(cyclohexyloxy)phenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

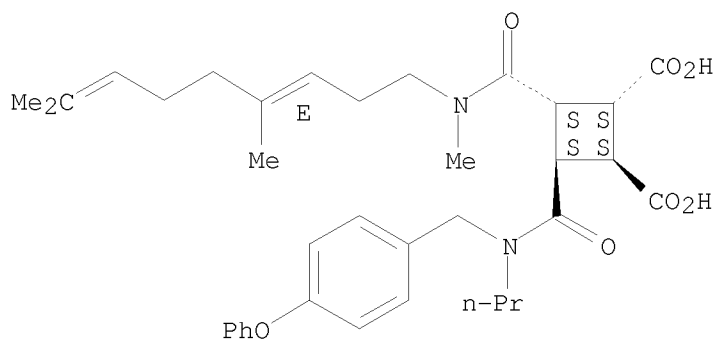




RN 169942-23-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(3E)-4,8-dimethyl-3,7-nonadien-1-yl]methylamino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

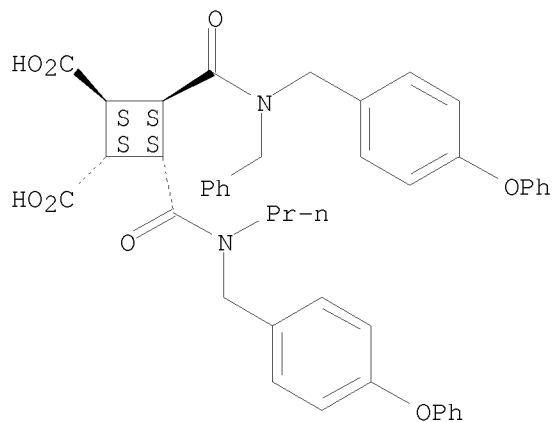
Relative stereochemistry.  
Double bond geometry as shown.



RN 169942-24-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

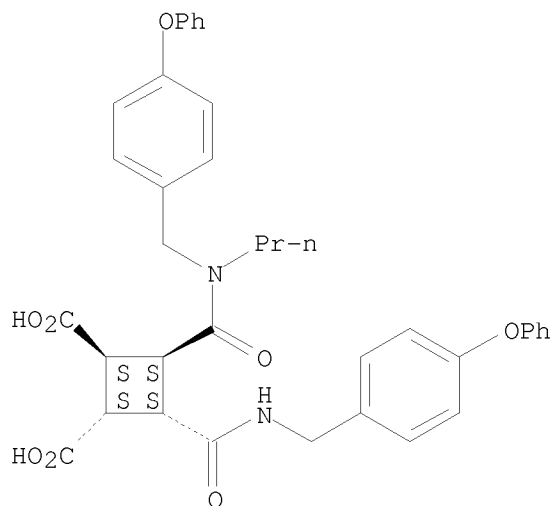
Relative stereochemistry.



RN 169942-25-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(4-phenoxyphenyl)methyl]amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

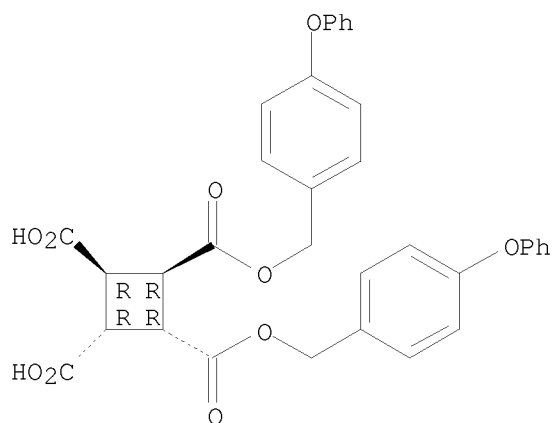
Relative stereochemistry.



RN 169942-26-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis[(4-phenoxyphenyl)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

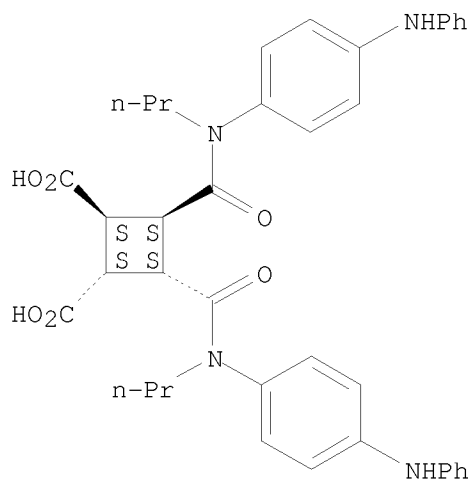
Relative stereochemistry.



RN 169942-27-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

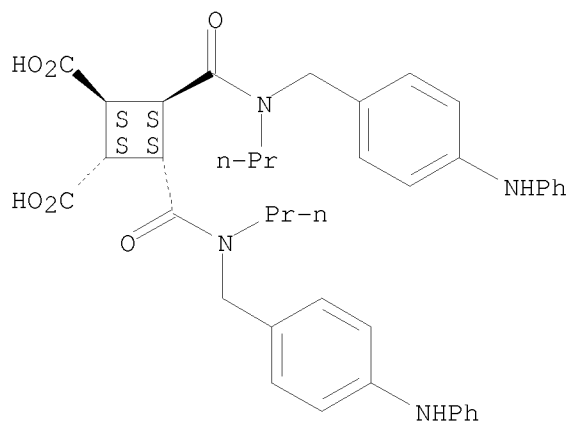
Relative stereochemistry.



RN 169942-28-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylamino)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

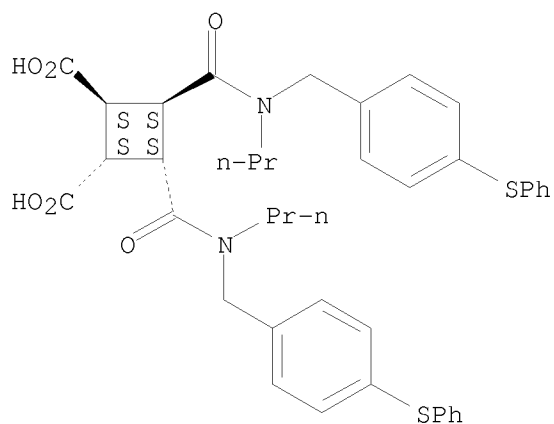
Relative stereochemistry.



RN 169942-29-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylthio)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

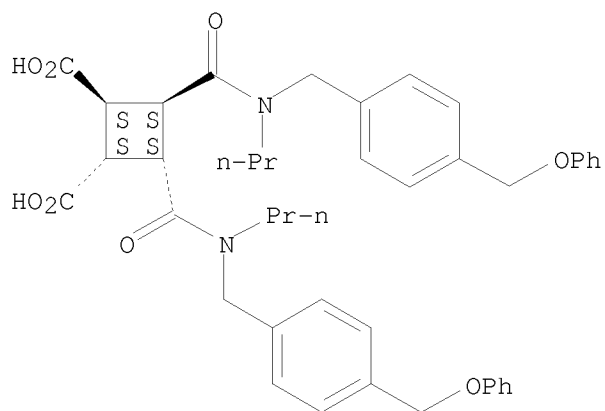
Relative stereochemistry.



RN 169942-30-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenoxy)methyl]phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

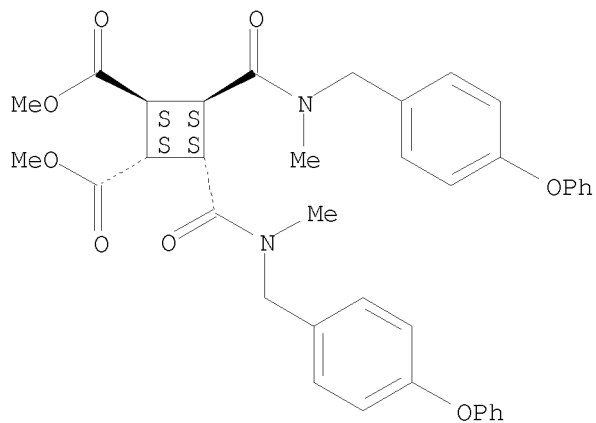
Relative stereochemistry.



RN 169942-41-0 CAPLUS

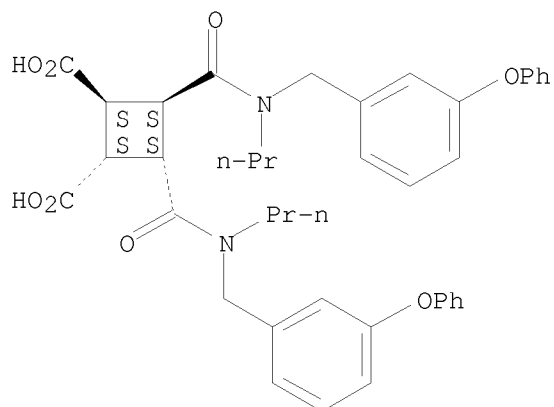
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, dimethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



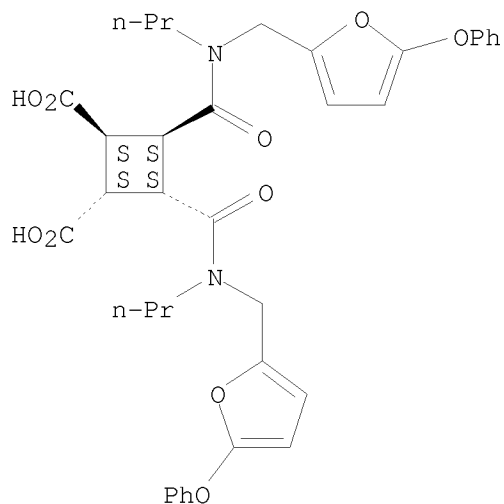
RN 169942-42-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(3-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



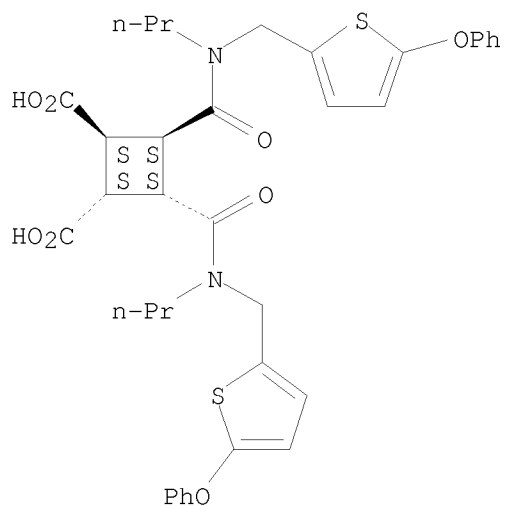
RN 169942-43-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(5-phenoxy-2-furanyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-44-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(5-phenoxy-2-thienyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

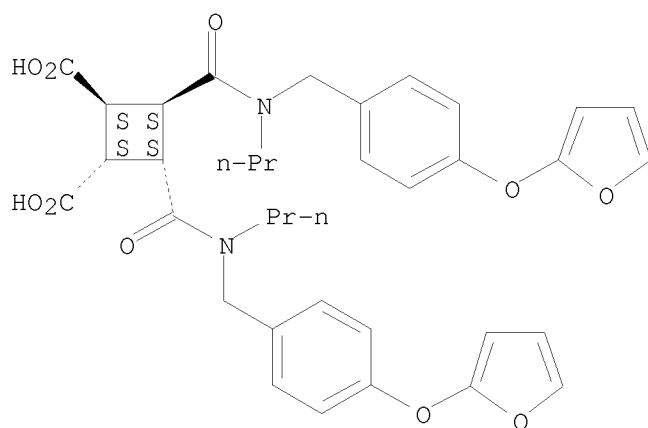
Relative stereochemistry.



RN 169942-45-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(2-furanyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

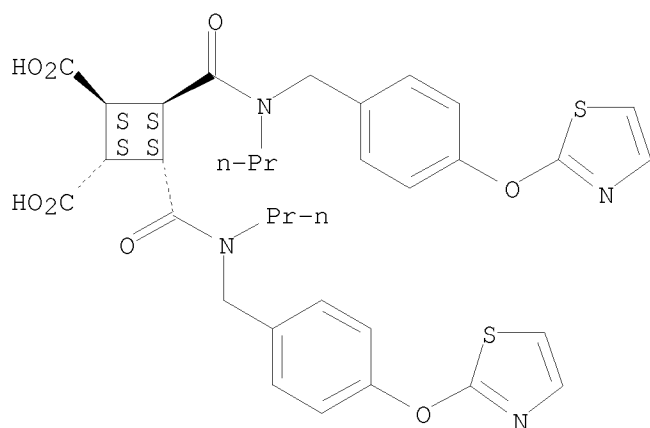
Relative stereochemistry.



RN 169942-46-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[propyl[[4-(2-thiazolyloxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

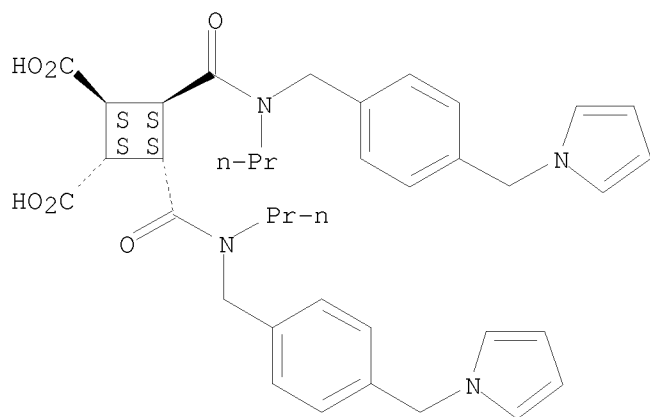
Relative stereochemistry.



RN 169942-47-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[propyl[[4-(1H-pyrrol-1-yl)methyl]phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

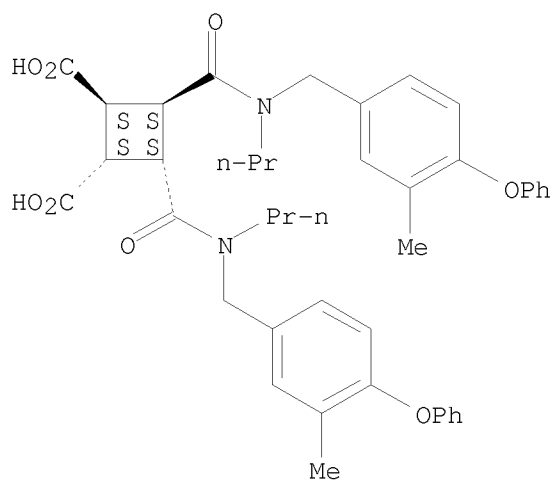
Relative stereochemistry.



RN 169942-48-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[3-methyl-4-phenoxyphenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

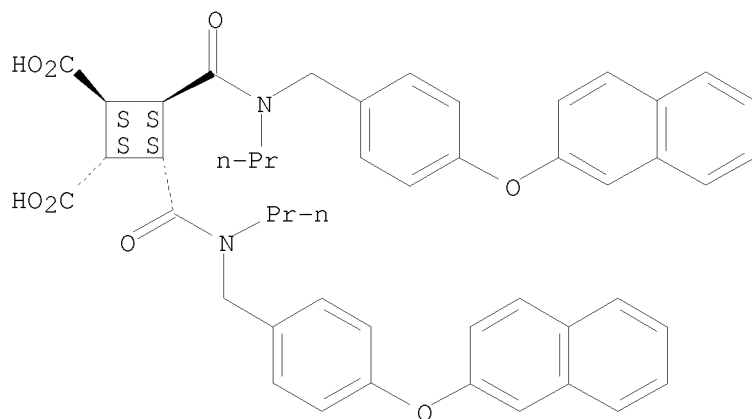
Relative stereochemistry.



RN 169942-49-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(2-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

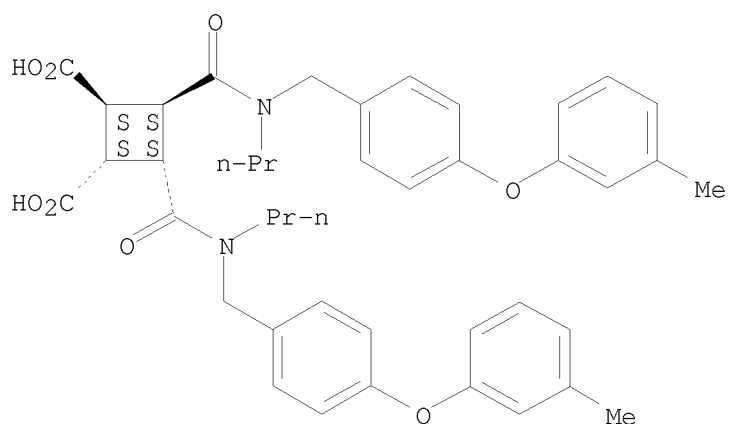


RN 169942-50-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(3-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

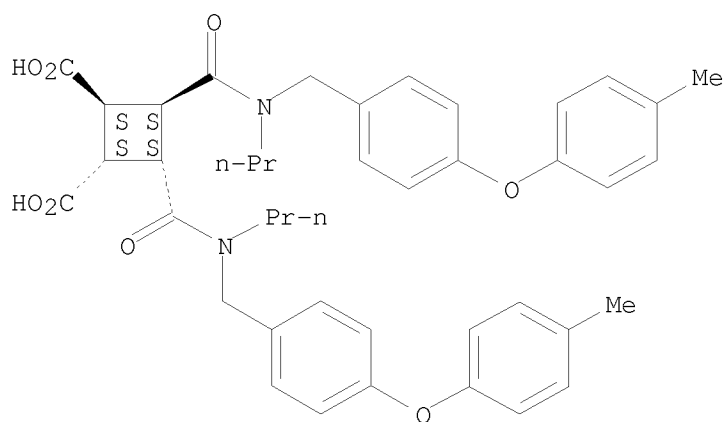




RN 169942-51-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

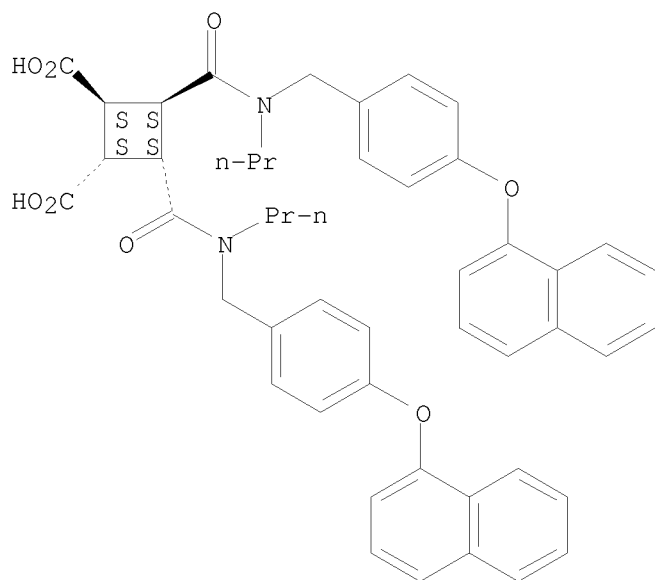
Relative stereochemistry.



RN 169942-52-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(1-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

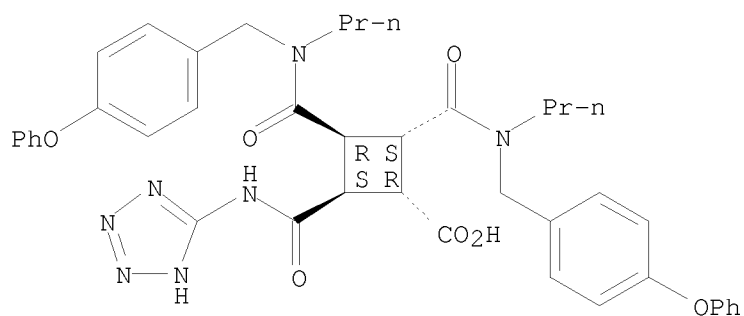
Relative stereochemistry.



RN 169942-53-4 CAPLUS

CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[(1H-tetrazol-5-ylamino)carbonyl]-, (1R,2S,3R,4S)-rel- (9CI) (CA INDEX NAME)

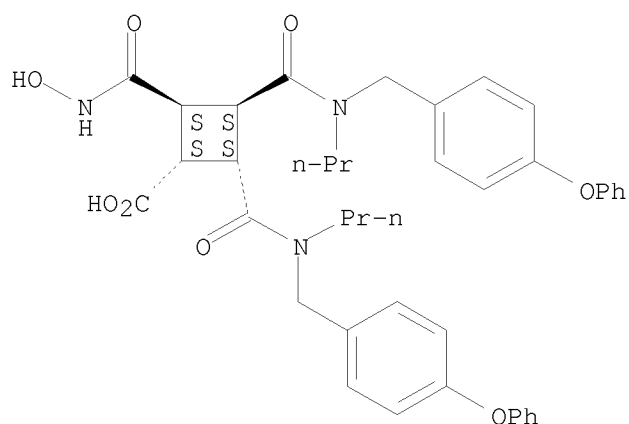
Relative stereochemistry.



RN 169942-57-8 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[(hydroxyamino)carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

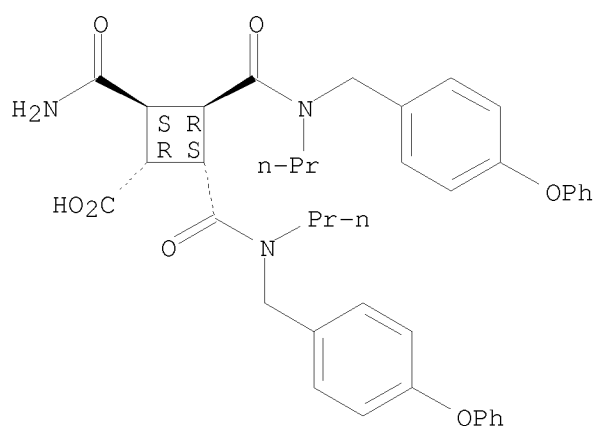
Relative stereochemistry.



RN 169942-58-9 CAPLUS

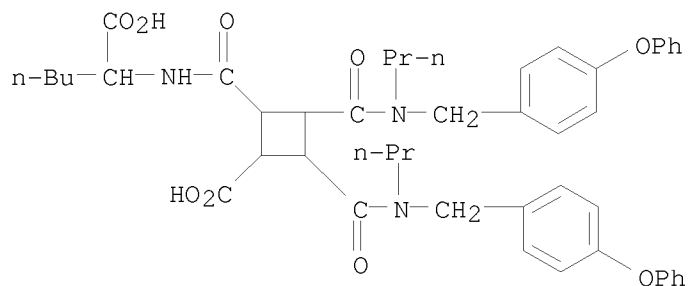
CN Cyclobutanecarboxylic acid, 2-(aminocarbonyl)-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-63-6 CAPLUS

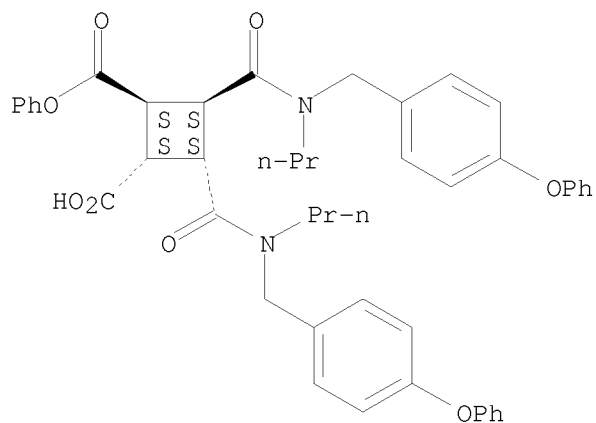
CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxypentyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)



RN 169942-64-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monophenyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

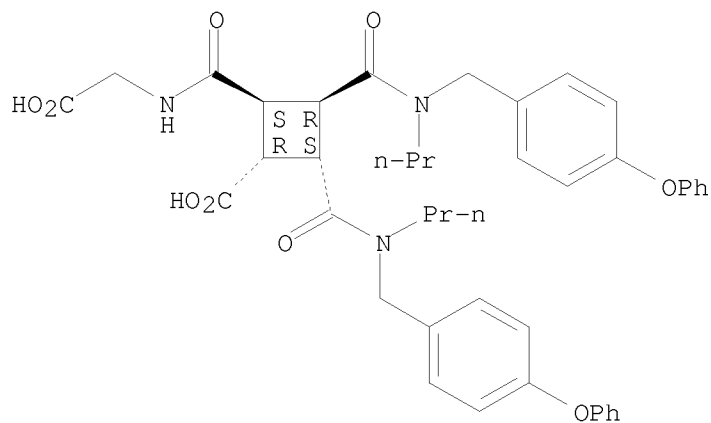
Relative stereochemistry.



RN 169942-65-8 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(carboxymethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

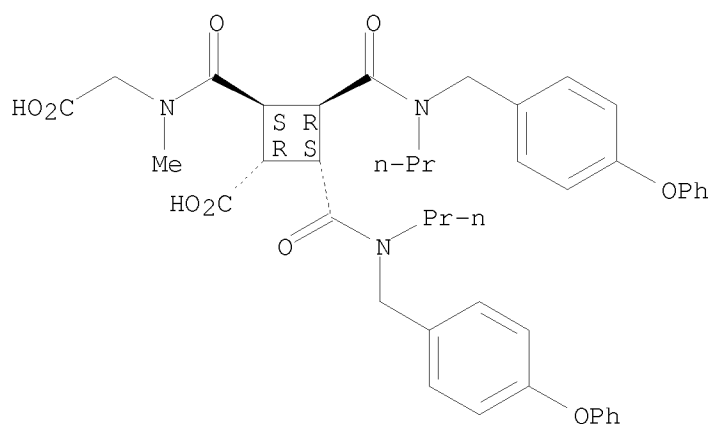
Relative stereochemistry.



RN 169942-67-0 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(carboxymethyl)methylamino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

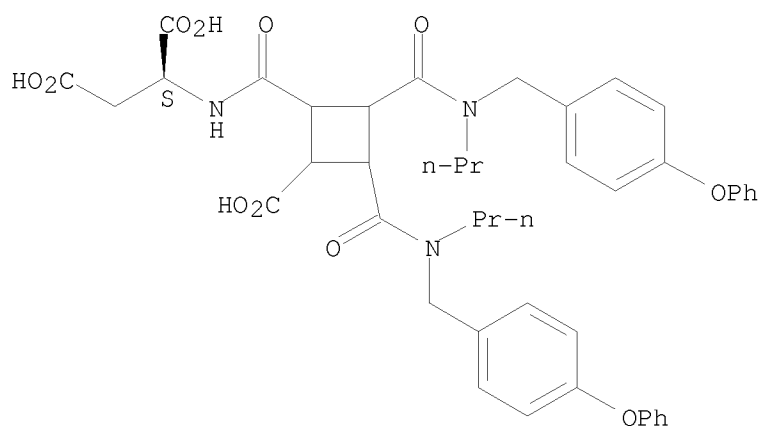
Relative stereochemistry.



RN 169942-68-1 CAPLUS

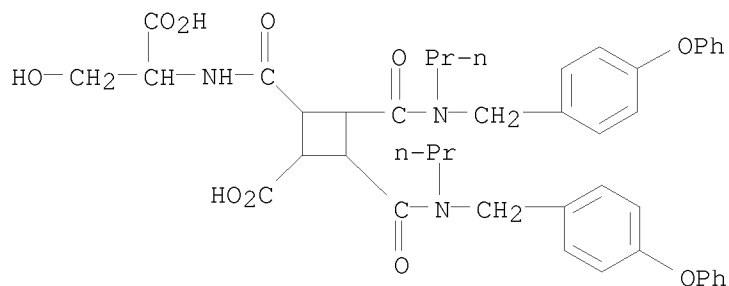
CN L-Aspartic acid, N-[[[2-carboxy-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]cyclobutyl]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



RN 169942-69-2 CAPLUS

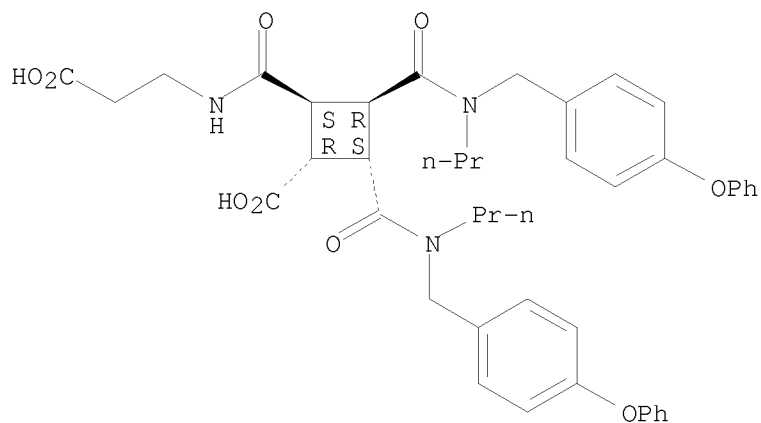
CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxy-2-hydroxyethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)



RN 169942-70-5 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(2-carboxyethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

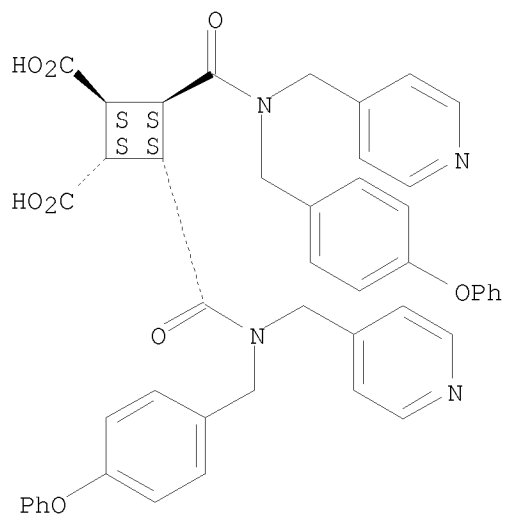
Relative stereochemistry.



RN 169942-71-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](4-pyridinylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

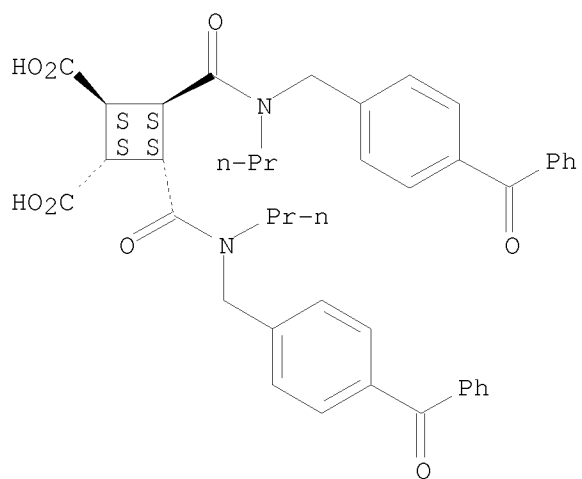
Relative stereochemistry.



RN 169942-72-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-benzoylphenyl)methyl](4-pyridinylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

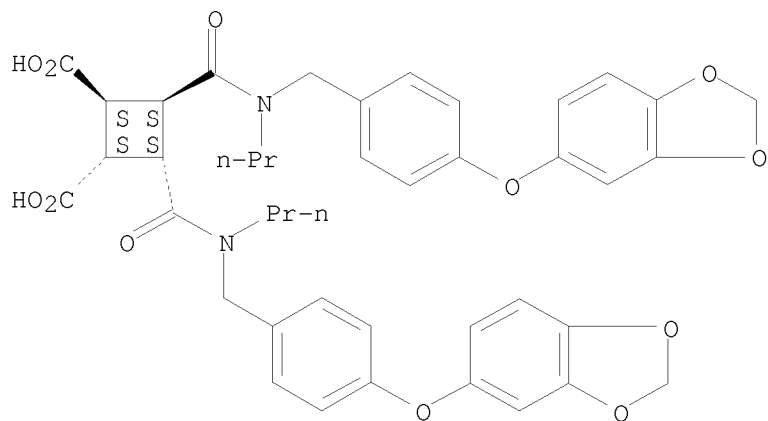
Relative stereochemistry.



RN 169942-73-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[4-(1,3-benzodioxol-5-yloxy)phenyl]methylpropylamino carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

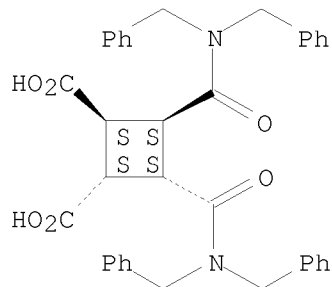
Relative stereochemistry.



RN 169942-75-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[bis(phenylmethyl)amino]carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

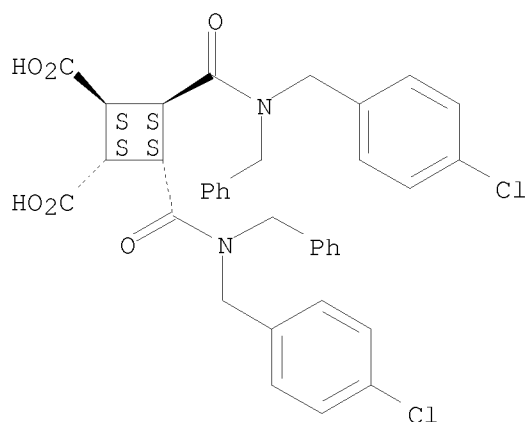
Relative stereochemistry.



RN 169942-76-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-chlorophenyl)methyl](phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

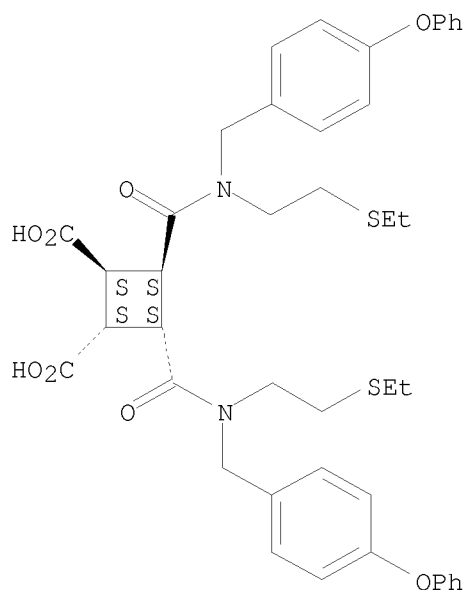
Relative stereochemistry.



RN 169942-82-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(ethylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

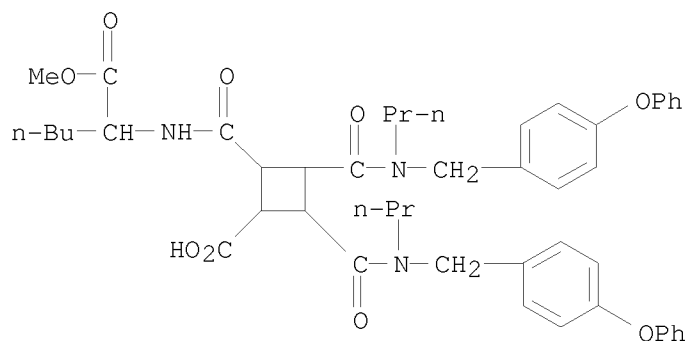
Relative stereochemistry.



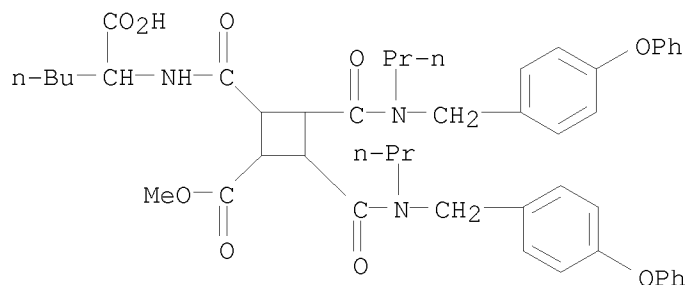
RN 169944-08-5 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[1-(methoxycarbonyl)pentyl]amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)



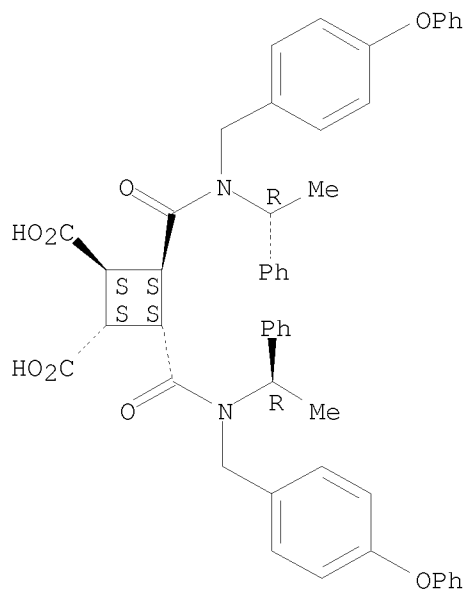


RN 169944-09-6 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxypentyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-methyl ester (CA INDEX NAME)



RN 170207-64-4 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl] [(1R)-1-phenylethyl]amino]carbonyl]-, (1S,2S,3S,4S)- (CA INDEX NAME)

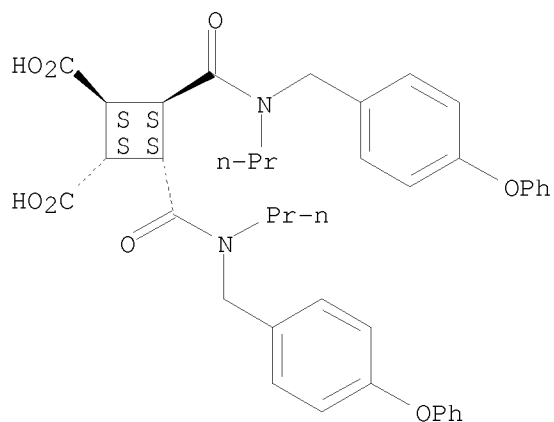
Absolute stereochemistry.



RN 170207-65-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-

phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-(-)- (9CI)  
(CA INDEX NAME)

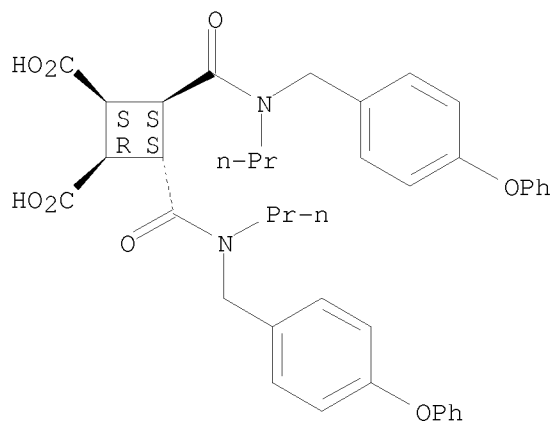
Rotation (-). Absolute stereochemistry unknown.



RN 170207-66-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4R)-rel- (9CI) (CA INDEX NAME)

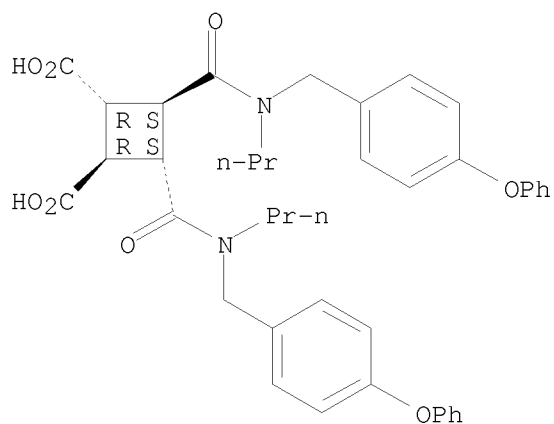
Relative stereochemistry.



RN 170207-67-7 CAPLUS

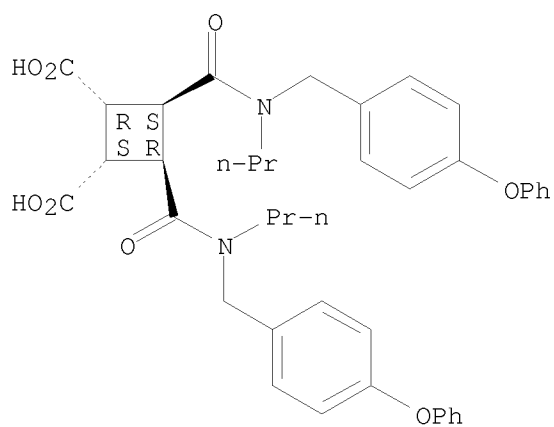
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3S,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



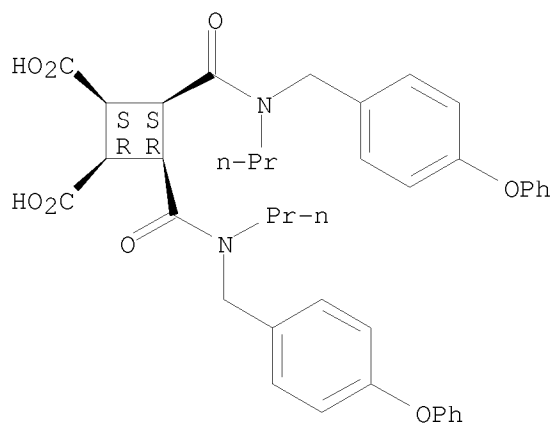
RN 170207-68-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



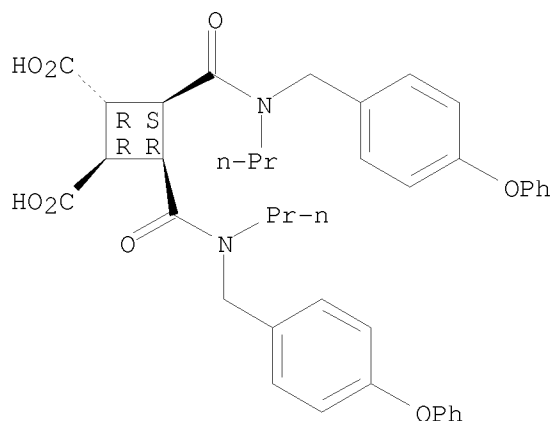
RN 170207-69-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3S,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



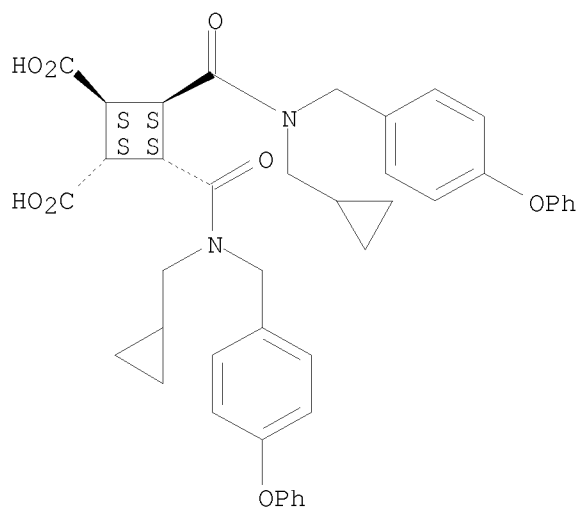
RN 170207-70-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



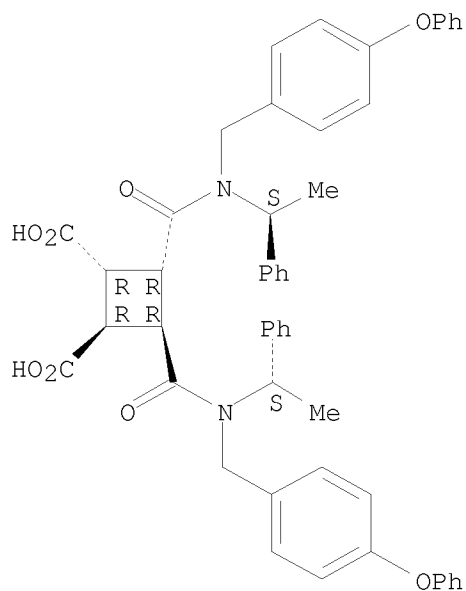
RN 170207-71-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclopropylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel-(-)- (9CI) (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.



RN 170207-73-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]-, (1R,2R,3R,4R)- (CA INDEX NAME)

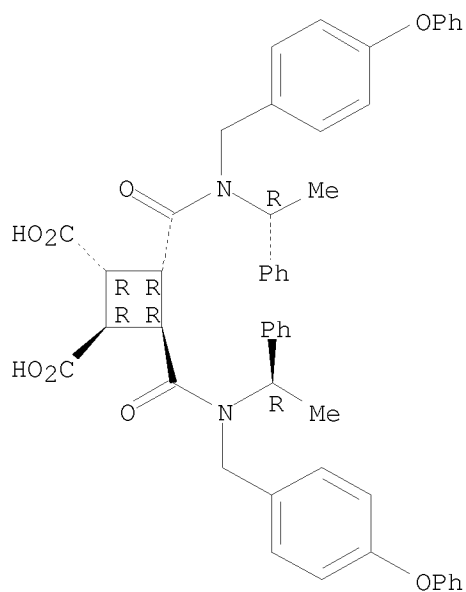
Absolute stereochemistry.



RN 170207-74-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl][(1R)-1-phenylethyl]amino]carbonyl-, (1R,2R,3R,4R)- (CA INDEX NAME)

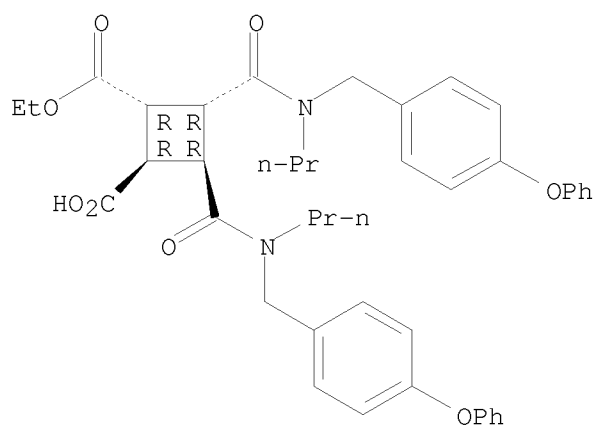
Absolute stereochemistry.



RN 185209-36-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl-, 1-ethyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

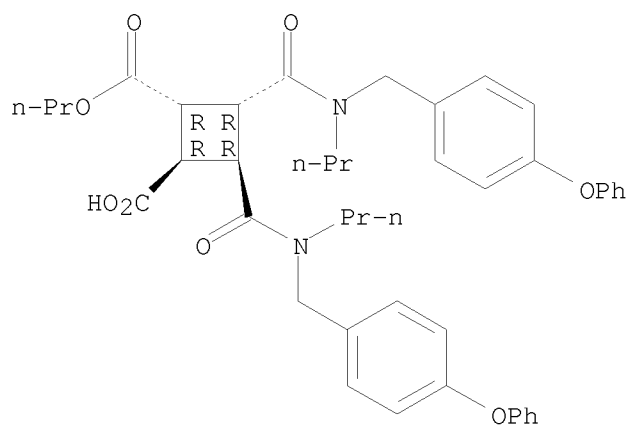
Relative stereochemistry.



RN 185209-37-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-propyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

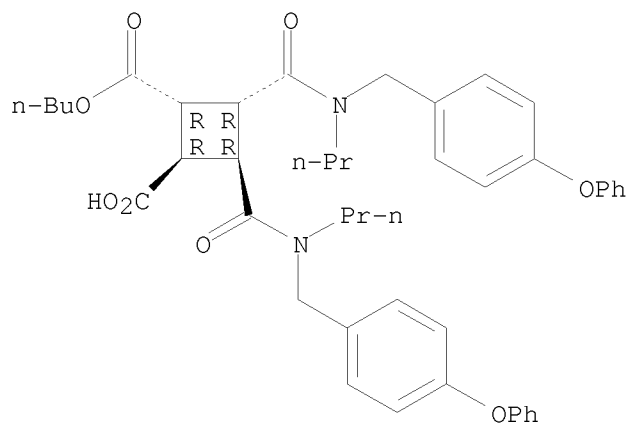
Relative stereochemistry.



RN 185209-38-5 CAPLUS

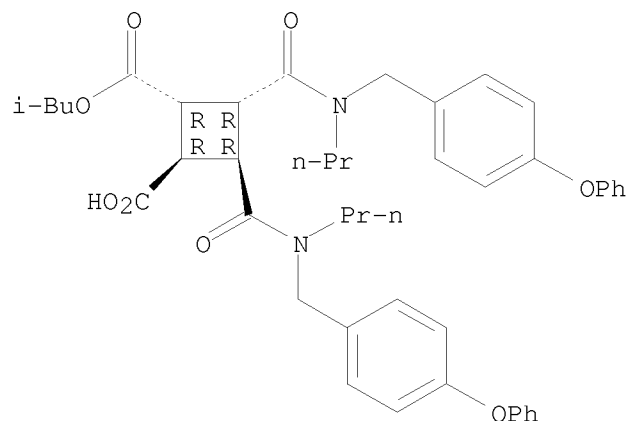
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-butyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



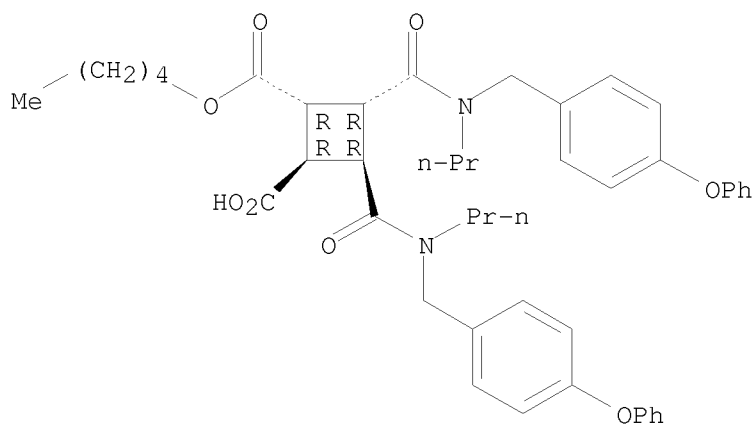
RN 185209-39-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, mono(2-methylpropyl) ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



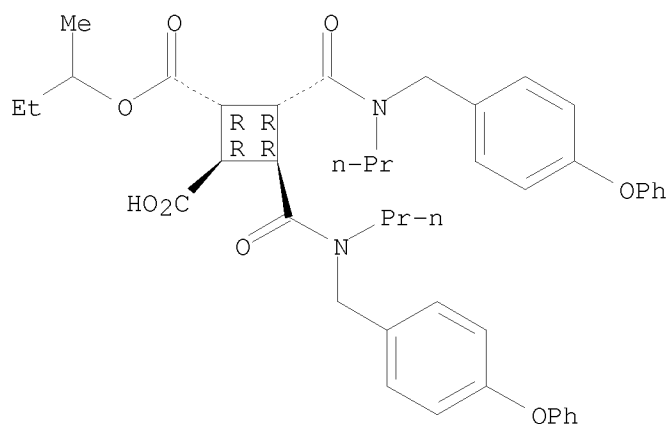
RN 185209-40-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-pentyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 185209-41-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(1-methylpropyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

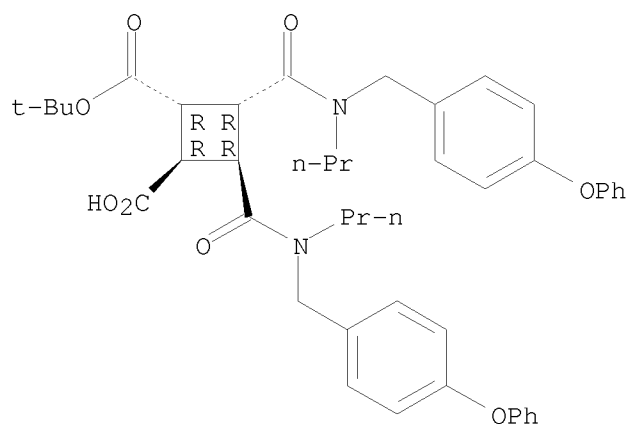
Relative stereochemistry.



RN 185209-42-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(1,1-dimethylethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

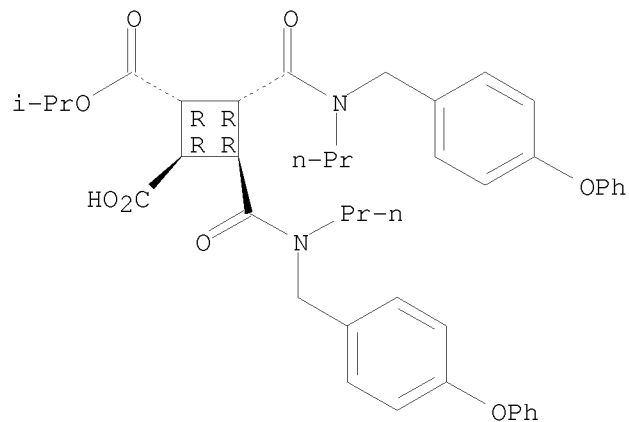
Relative stereochemistry.



RN 185209-43-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(1-methylethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

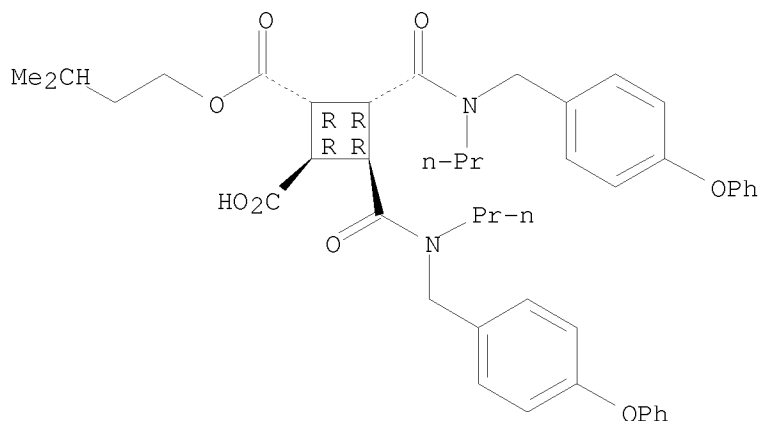
Relative stereochemistry.





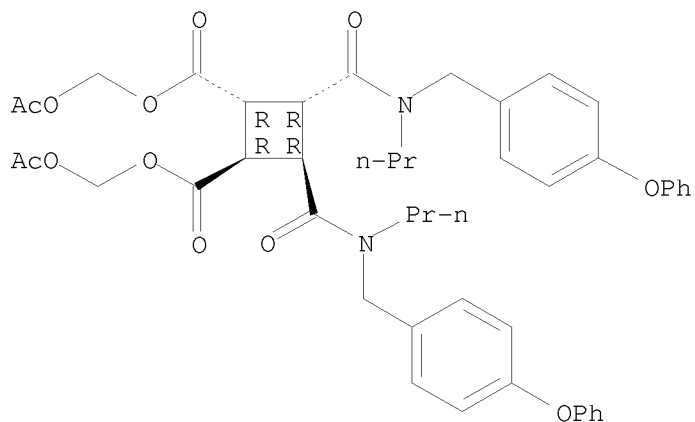
RN 185209-44-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, mono(3-methylbutyl) ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



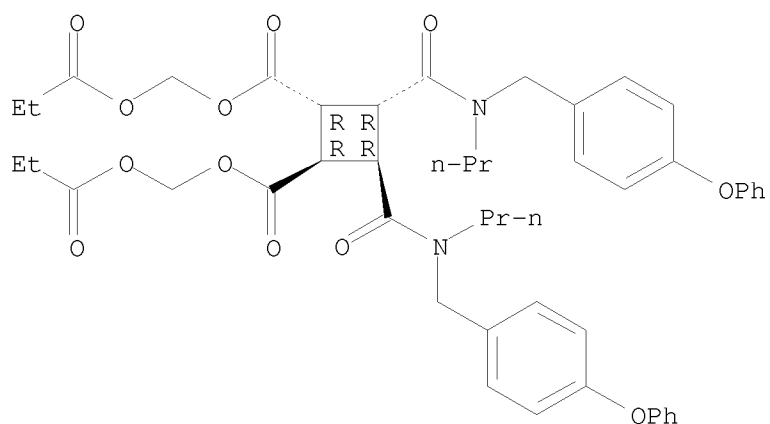
RN 185209-47-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(acetyloxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



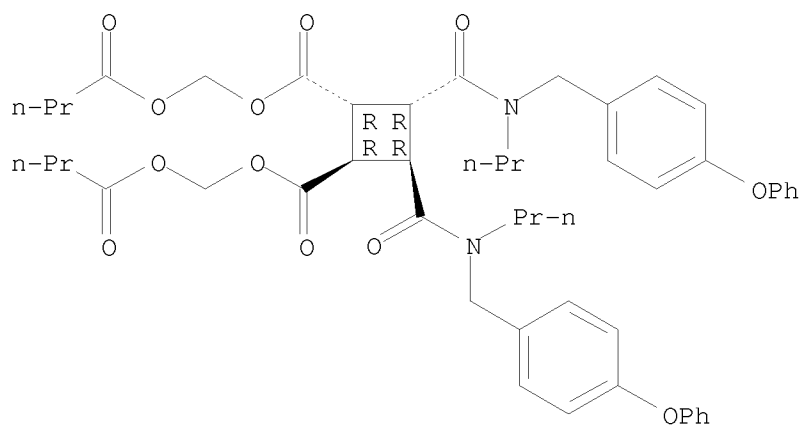
RN 185209-48-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



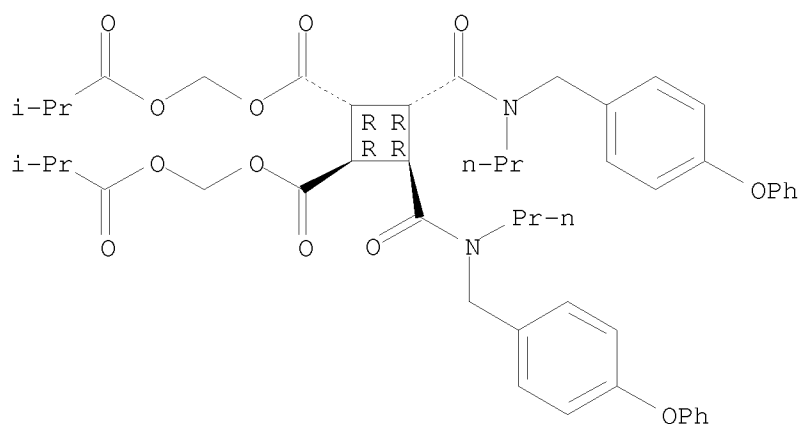
RN 185209-49-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(1-oxobutoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



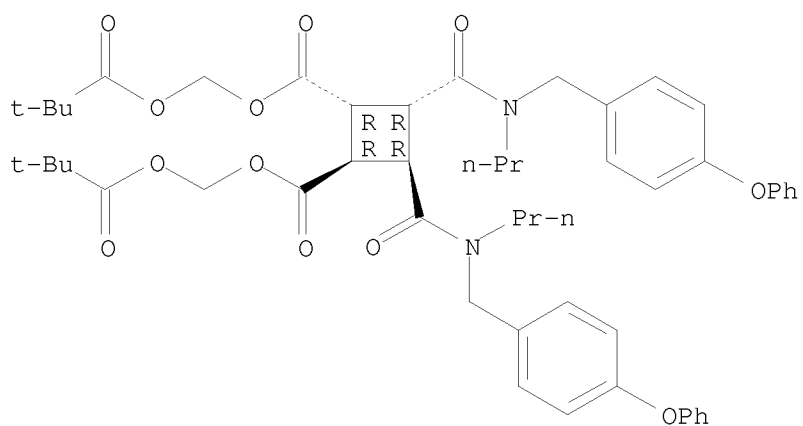
RN 185209-50-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(2-methyl-1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



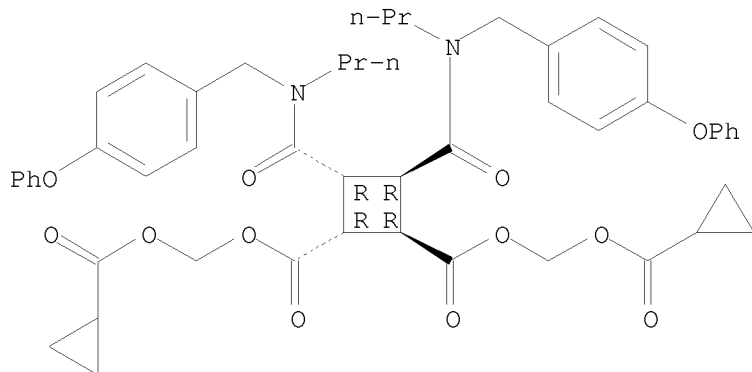
RN 185209-51-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(2,2-dimethyl-1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 185209-52-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(cyclopropylcarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

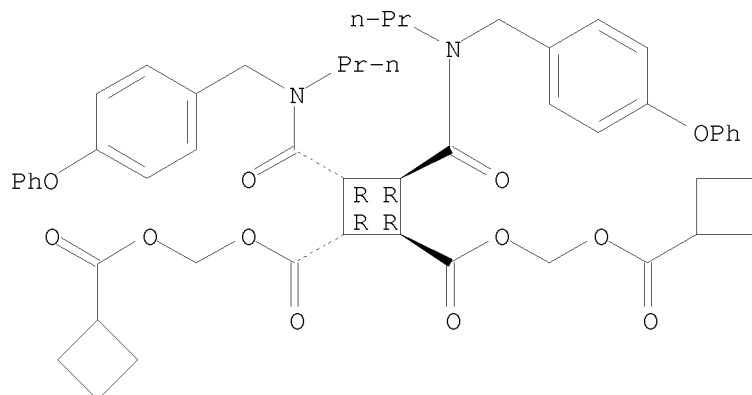
Relative stereochemistry.



RN 185209-53-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[[(cyclobutylcarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

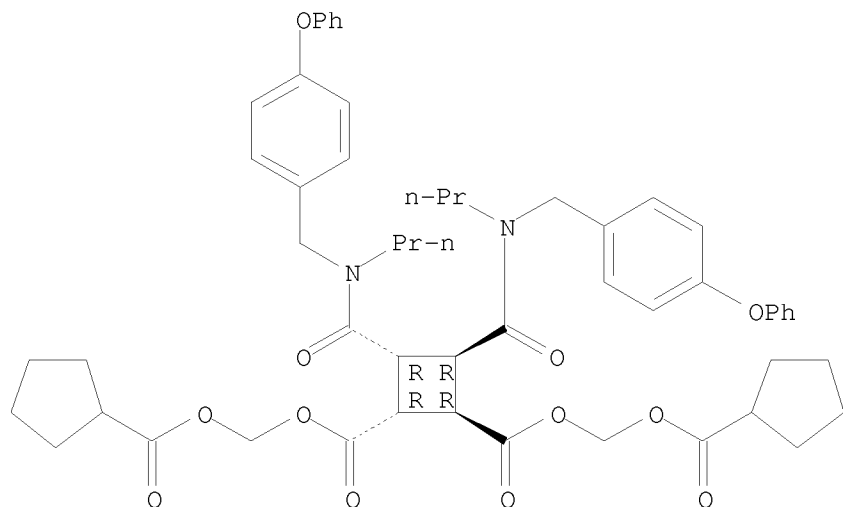
Relative stereochemistry.



RN 185209-54-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[[(cyclopentylcarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

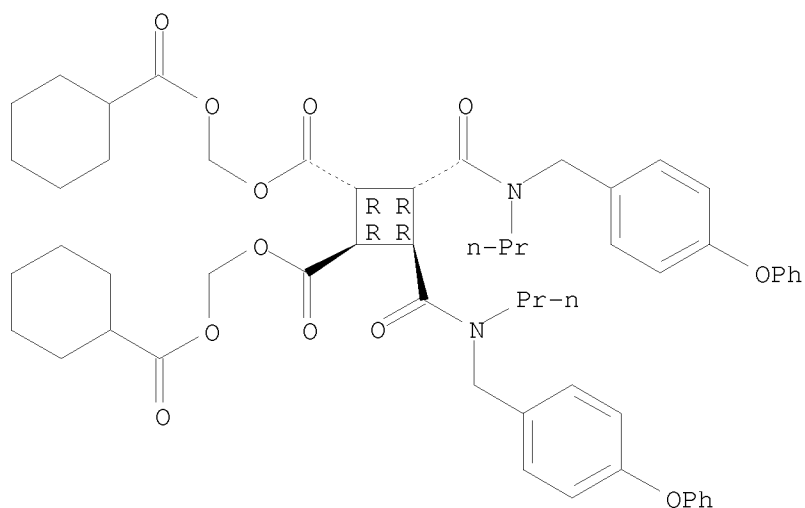
Relative stereochemistry.



RN 185209-55-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[[(cyclohexylcarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

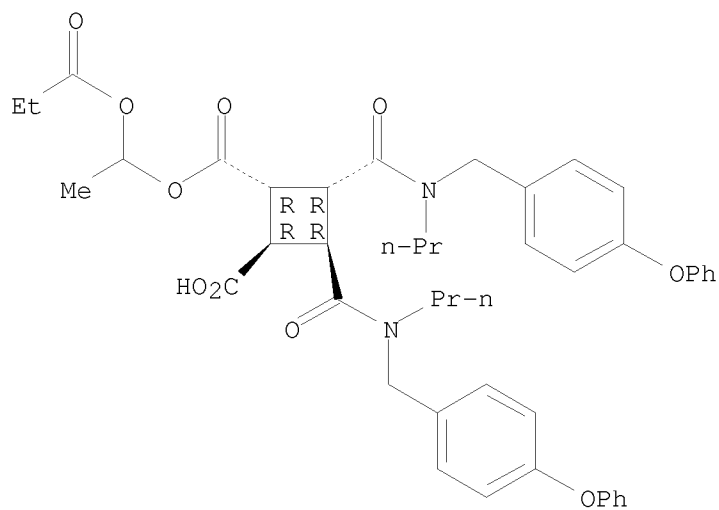
Relative stereochemistry.



RN 185209-57-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[1-(1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

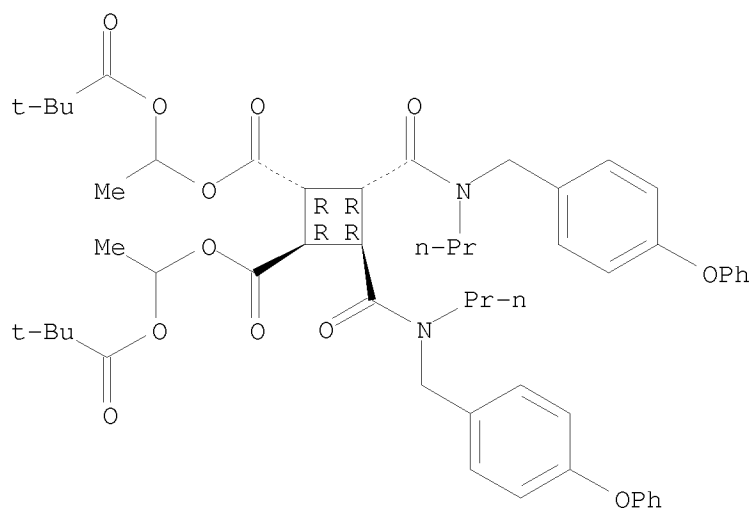
Relative stereochemistry.



RN 185209-58-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[1-(2,2-dimethyl-1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

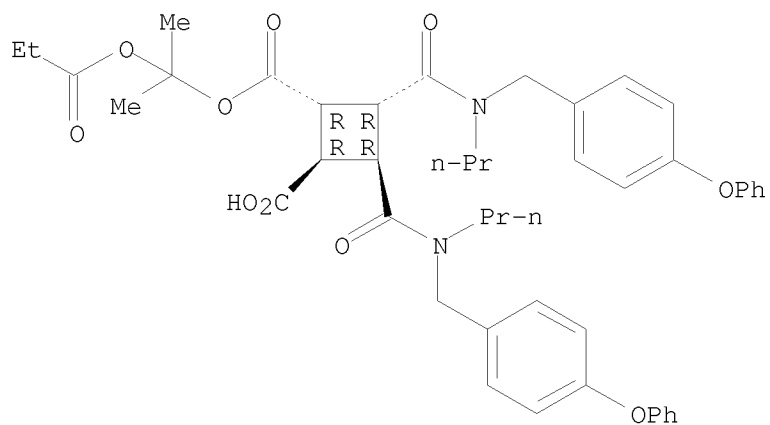
Relative stereochemistry.



RN 185209-59-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[1-methyl-1-(1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

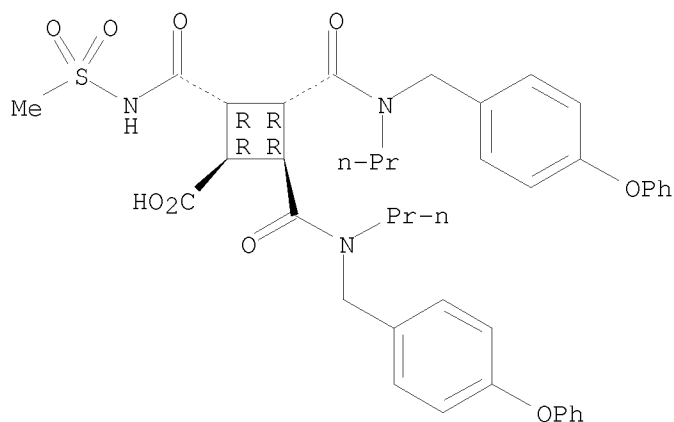
Relative stereochemistry.



RN 185209-64-7 CAPLUS

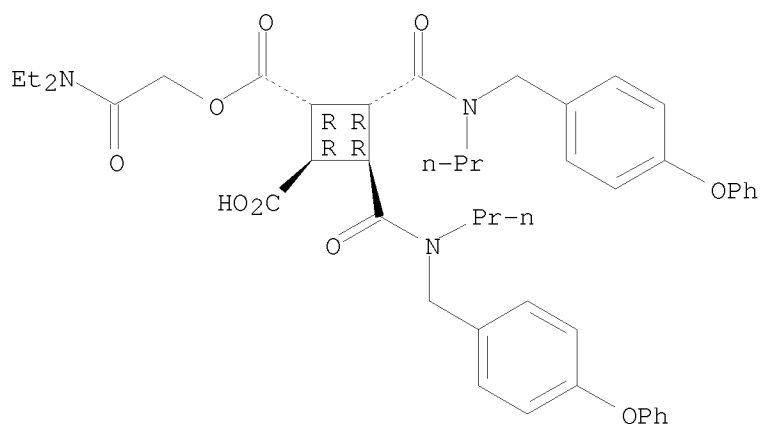
CN Cyclobutanecarboxylic acid, 2-[[[(methylsulfonyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



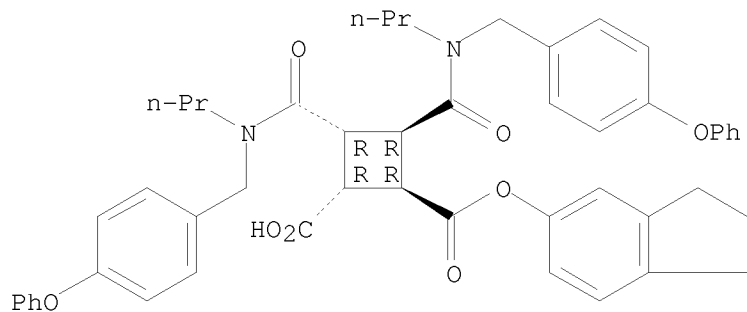
RN 185209-72-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[2-(diethylamino)-2-oxoethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 185209-73-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(2,3-dihydro-1H-inden-5-yl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

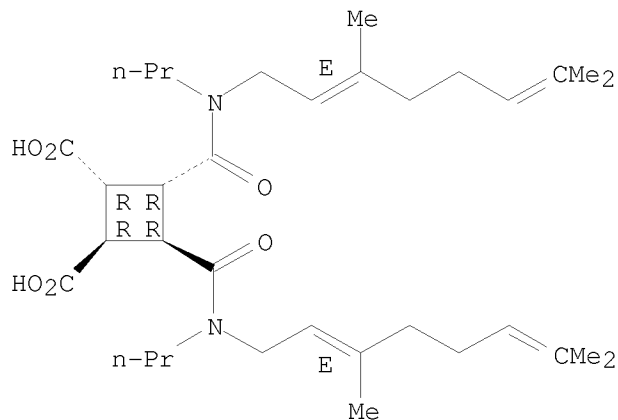
Relative stereochemistry.



RN 185209-74-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(2E)-3,7-dimethyl-2,6-octadien-

1-yl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

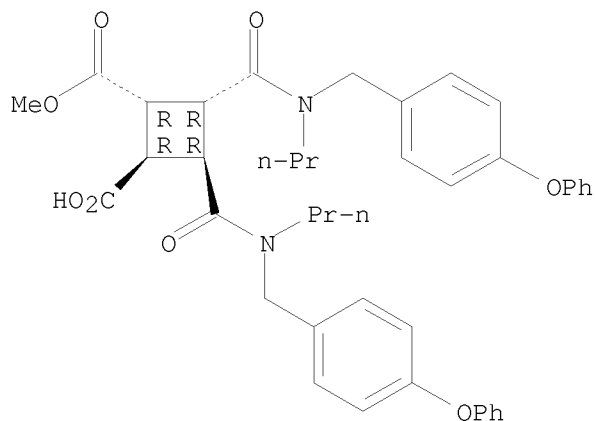
Rotation (+). Absolute stereochemistry unknown.  
Double bond geometry as shown.



RN 185209-78-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxymethyl)propylamino]carbonyl]-, 1-methyl ester, (1R,2R,3R,4R)-rel-(-)- (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.

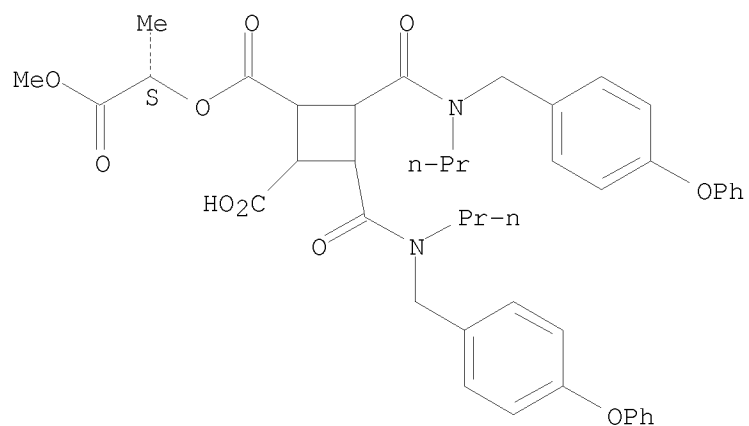


RN 185254-41-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxymethyl)propylamino]carbonyl]-, 1-[(1S)-2-methoxy-1-methyl-2-oxoethyl] ester (CA INDEX NAME)

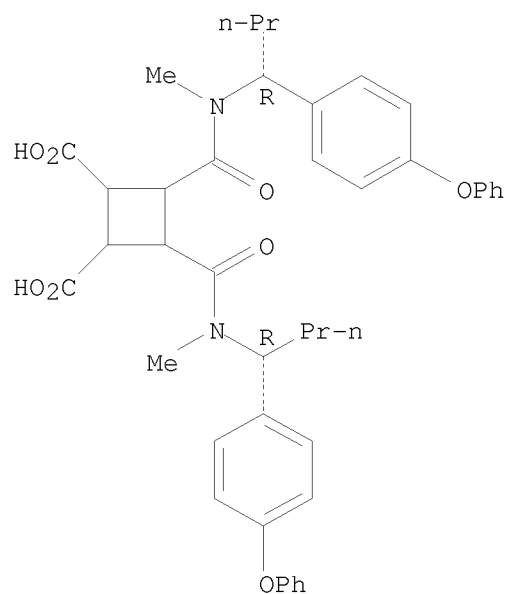
Absolute stereochemistry.





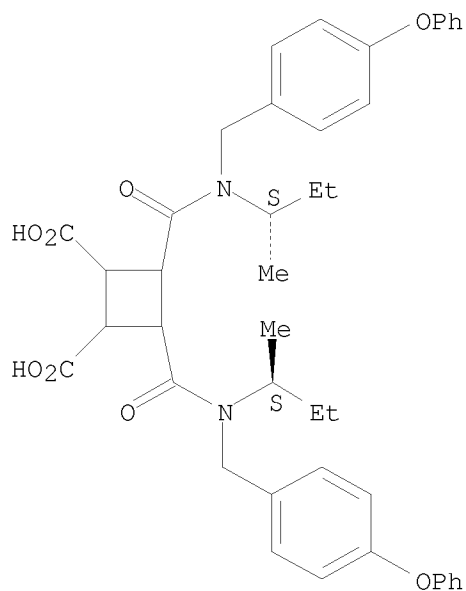
RN 185254-60-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1R)-1-(4-phenoxyphenyl)butyl]amino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



RN 185254-68-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(1S)-1-methylpropyl][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)

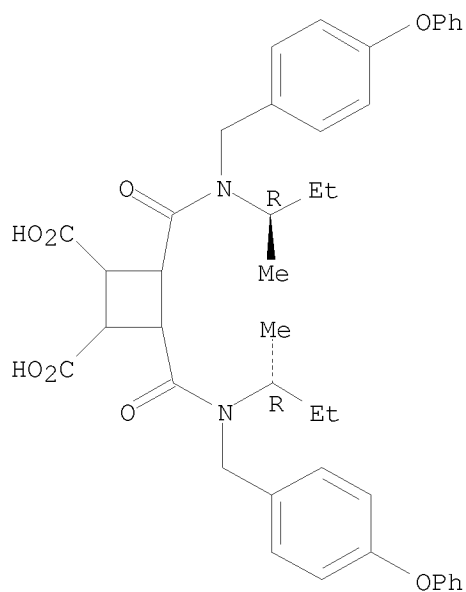
Absolute stereochemistry.



RN 185254-69-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(1R)-1-methylpropyl][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)

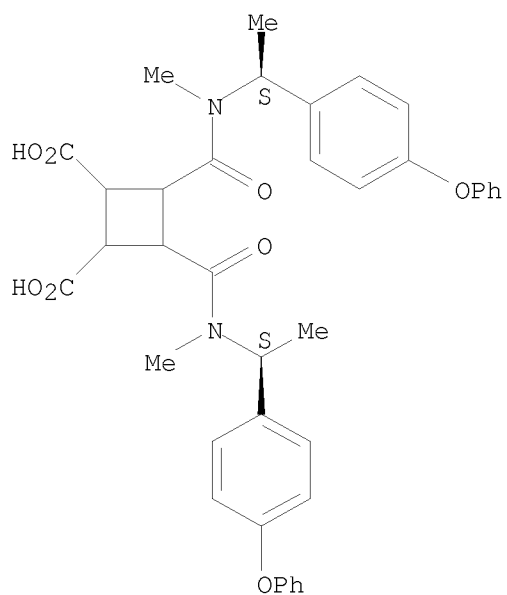
Absolute stereochemistry.



RN 185254-70-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1S)-1-(4-phenoxyphenyl)ethyl]amino]carbonyl]- (CA INDEX NAME)

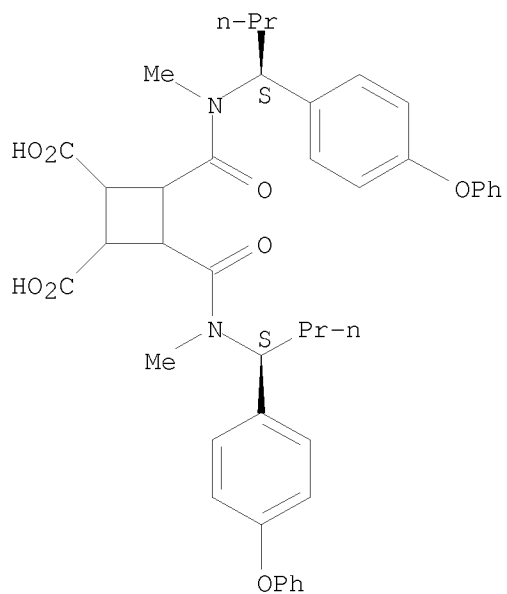
Absolute stereochemistry.



RN 185254-77-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1S)-1-(4-phenoxyphenyl)butyl]amino]carbonyl]- (CA INDEX NAME)

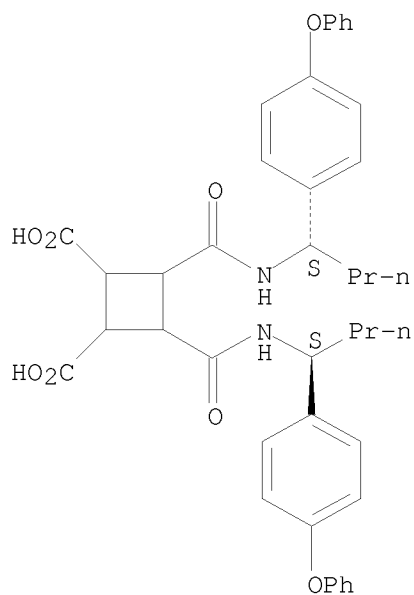
Absolute stereochemistry.



RN 185254-78-8 CAPLUS

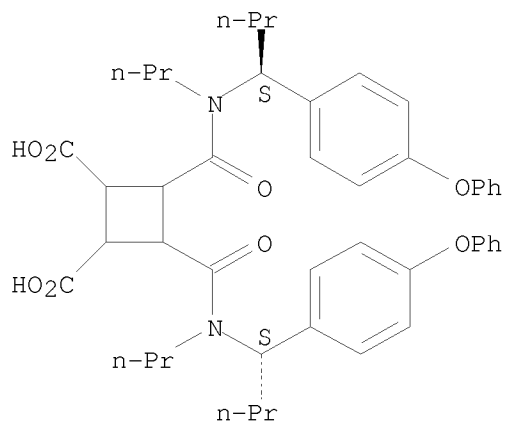
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[1-(4-phenoxyphenyl)butyl]amino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



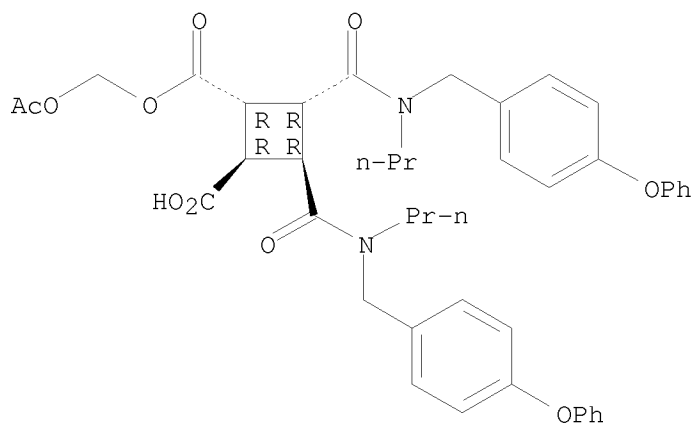
RN 185254-79-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(1S)-1-(4-phenoxyphenyl)butyl]propylamino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



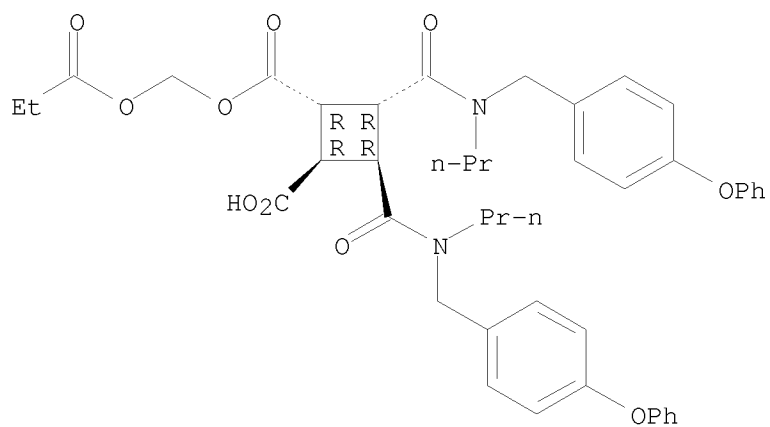
RN 210643-32-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(acetyloxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



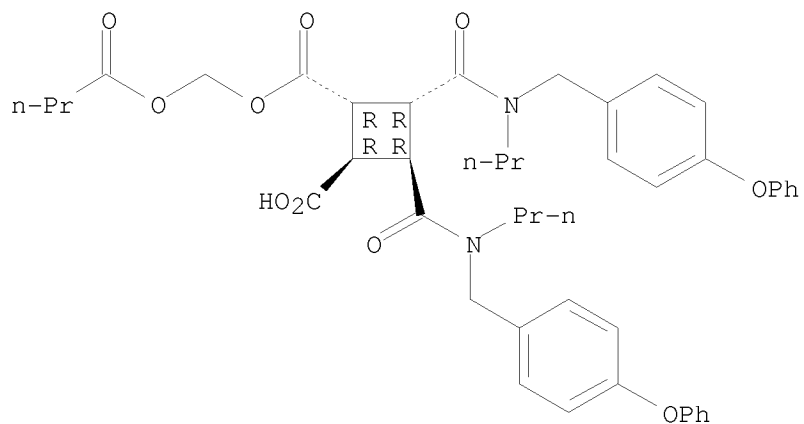
RN 210643-34-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



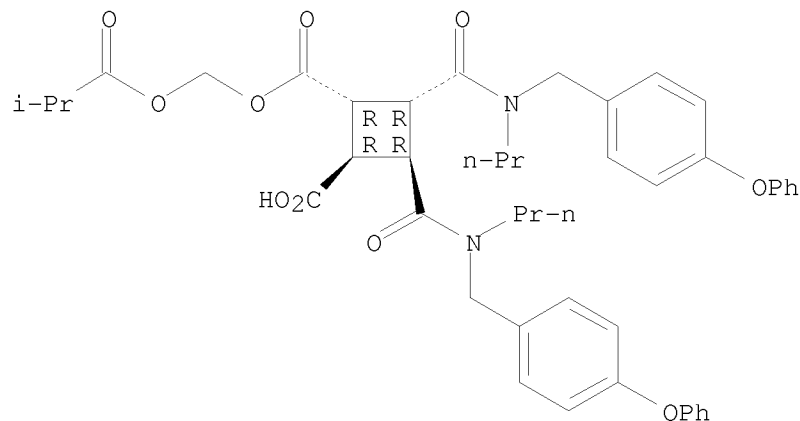
RN 210643-35-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(1-oxobutoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



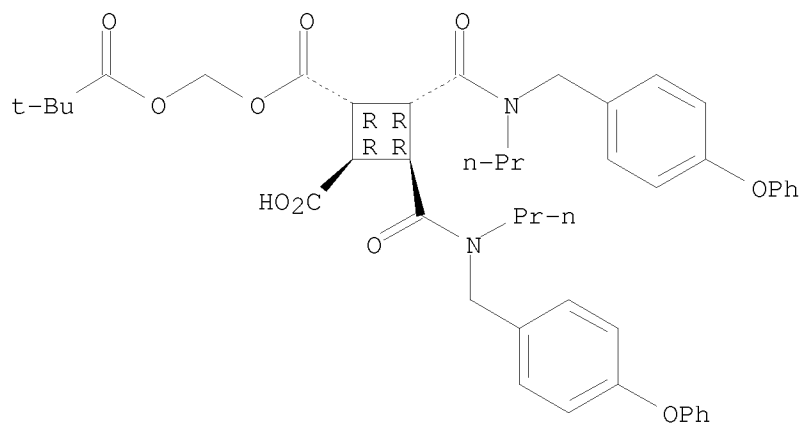
RN 210643-36-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(2-methyl-1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



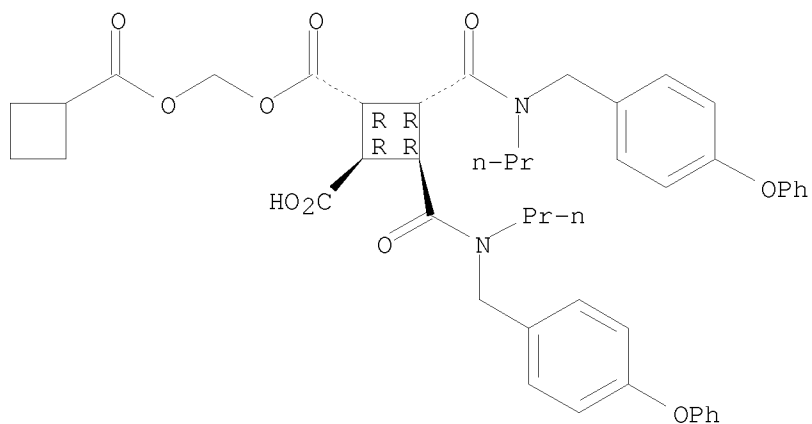
RN 210643-37-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(2,2-dimethyl-1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



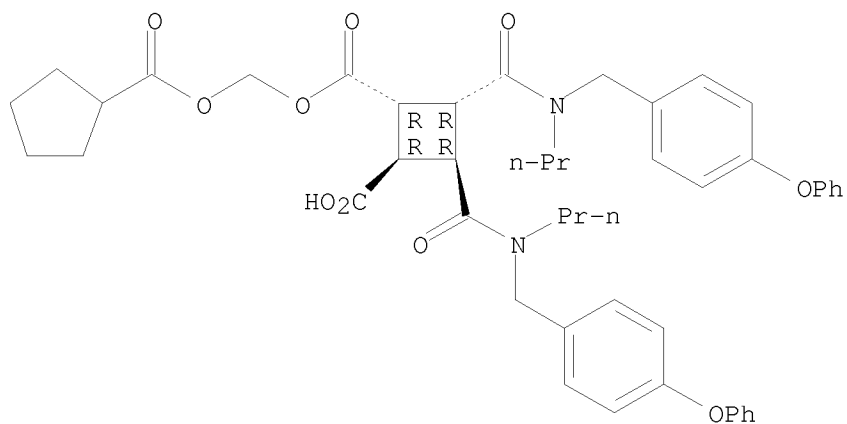
RN 210643-38-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[[[(cyclobutylcarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



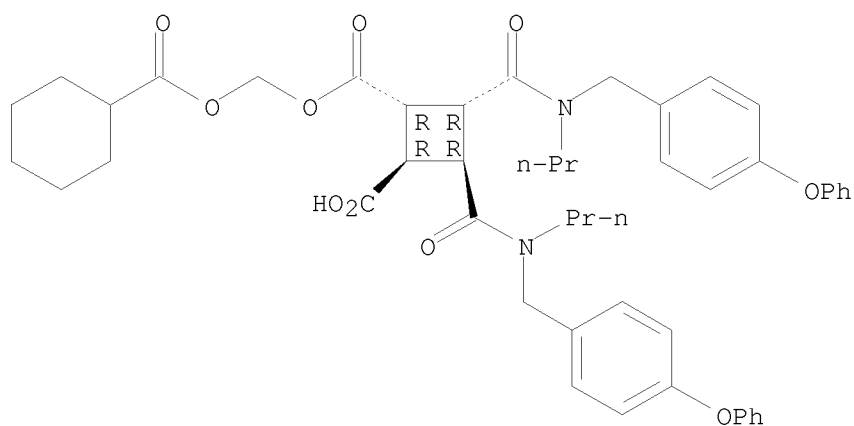
RN 210643-39-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[[[(cyclopentylcarbonyl)oxy]methyl] ester], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



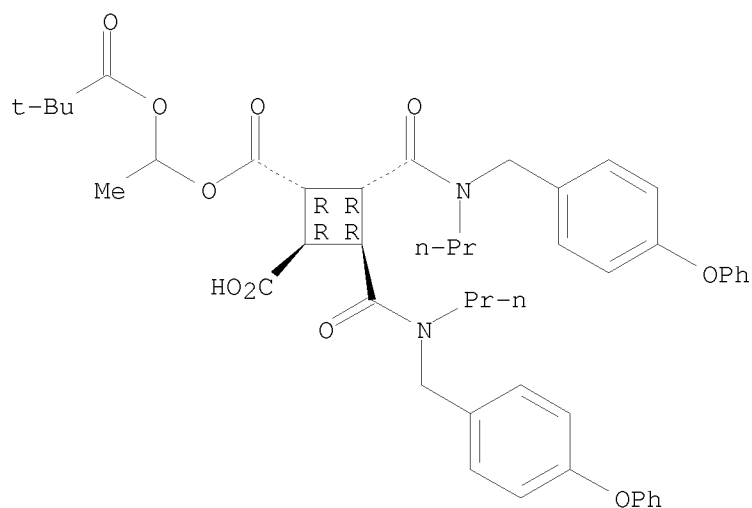
RN 210643-40-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[[[(cyclohexylcarbonyl)oxy]methyl] ester], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 210643-41-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[1-(2,2-dimethyl-1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

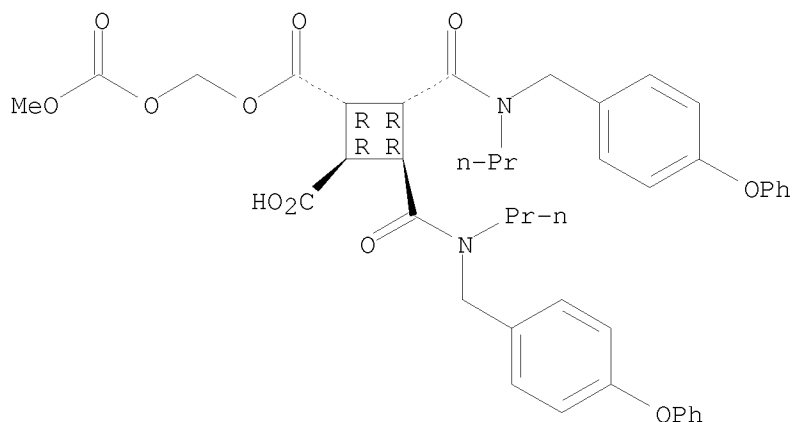
Relative stereochemistry.



RN 210643-42-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(methoxycarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

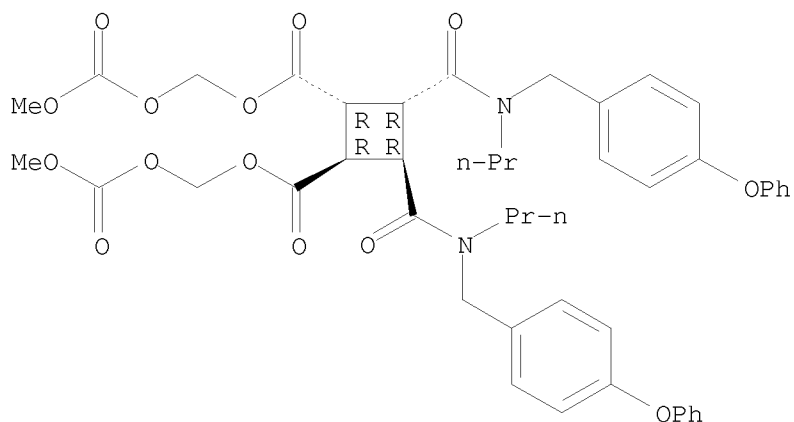
Relative stereochemistry.





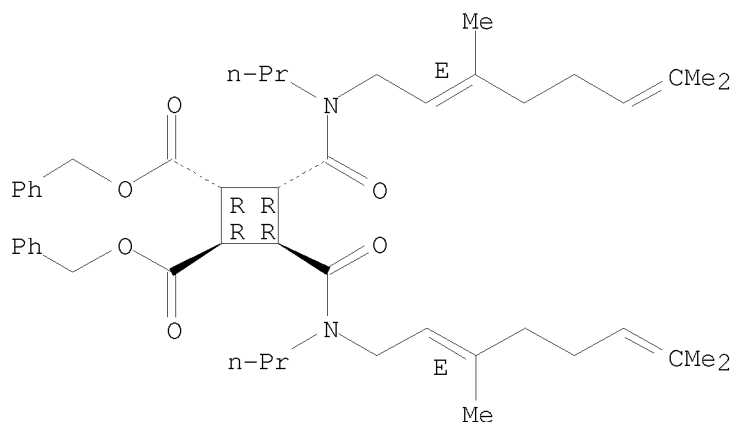
RN 210643-43-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[(methoxycarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

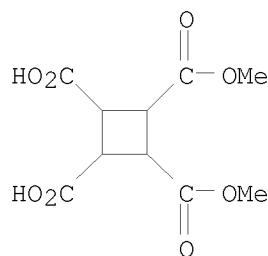


IT 185210-20-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)  
 RN 185210-20-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2E)-3,7-dimethyl-2,6-octadien-1-yl]propylamino]carbonyl]-, 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.  
 Double bond geometry as shown.



IT 91109-83-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; preparation of cyclobutane derivs. as inhibitors of  
 squalene synthetase and protein farnesyltransferase)  
 RN 91109-83-0 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester (CA INDEX  
 NAME)



REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 57 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:461752 CAPLUS

DOCUMENT NUMBER: 129:217195

ORIGINAL REFERENCE NO.: 129:44155a, 44158a

TITLE: A positive resist type, soluble photosensitive  
 polyimide: synthesis and properties of polyimides  
 containing fluoro groups and cyclobutane rings  
 AUTHOR(S): Chae, Kyu Ho; Park, Jong Shin; Cho, Chi Hoon; Chang,  
 Ji Young

CORPORATE SOURCE: Department of Polymer Engineering, Chonnam National  
 University, Chonnam, 500-757, S. Korea

SOURCE: Korea Polymer Journal (1998), 6(2), 174-180  
 CODEN: KPJOE2; ISSN: 1225-5947

PUBLISHER: Polymer Society of Korea

DOCUMENT TYPE: Journal

LANGUAGE: English

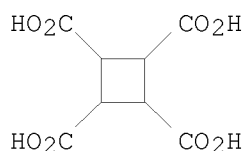
AB Two polyimides containing fluoro and cyclobutane groups were prepared by the  
 polycondensation of maleic anhydride cyclobutane dimer with diamines  
 containing fluoro groups. The chemical structures of these polyimides were  
 identified by spectroscopic methods. Viscosities of polyamic acids  
 measured in di-Me acetamide were in the range of 0.42.apprx.0.62 dL/g.  
 They have comparable thermal stabilities but better solubility than  
 non-fluorinated counterparts. These polyimides showed a type of pos.

photoresist which can be developable with THF. The spectroscopic studies of the polymers and a model compound by UV and IR indicate that both photosplitting of cyclobutane groups and photooxidn. of imide groups took place during the photolysis of these polyimides.

IT 212488-63-6P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (model compound; preparation and characterization of cyclobutane-containing fluoropolymer polyimides with pos. resist properties)  
 RN 212488-63-6 CAPLUS  
 CN Cyclobutanedicarboxylic acid, bis[[4-(4-hydroxyphenyl)amino]carbonyl]- (9CI) (CA INDEX NAME)

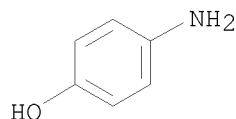
CM 1

CRN 53159-92-5  
 CMF C8 H8 O8



CM 2

CRN 123-30-8  
 CMF C6 H7 N O

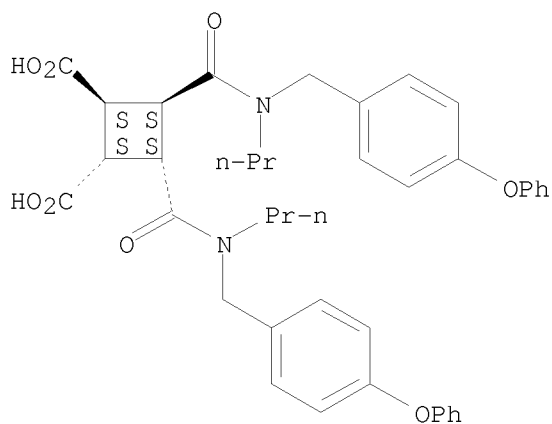


REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 58 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1998:310410 CAPLUS  
 DOCUMENT NUMBER: 129:54124  
 ORIGINAL REFERENCE NO.: 129:11285a,11288a  
 TITLE: Cyclopentanedi- and tricarboxylic acids as squalene synthase inhibitors: syntheses and evaluation  
 AUTHOR(S): Shen, Wang; Garvey, David S.; Cohen, Jerry; Stein, Herman; Rosenberg, Saul H.  
 CORPORATE SOURCE: Pharmaceutical Products Division, Cancer Research, Abbott Laboratories, Abbott Park, IL, 60064, USA  
 SOURCE: Bioorganic & Medicinal Chemistry Letters (1998), 8(8), 891-896  
 CODEN: BMCLE8; ISSN: 0960-894X  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Based on earlier lead squalene synthase inhibitor A-87049 and zaragozic acids, a series of cyclopentanedi- and tricarboxylic acids were synthesized and evaluated against the enzyme. Some exhibited good potency and structure-activity relationship revealed the importance of conformation and substitution pattern of these synthetic inhibitors.

IT 169941-83-7  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
 (preparation of cyclopentanedicarboxylates and cyclopentanetricarboxylates as squalene synthase inhibitors)  
 RN 169941-83-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 59 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:235919 CAPLUS

DOCUMENT NUMBER: 128:270941

ORIGINAL REFERENCE NO.: 128:53641a, 53644a

TITLE: Preparation and properties of high molecular weight polyamic ester having a cyclobutane moiety in the main chain

AUTHOR(S): Hasegawa, Masaki; Miura, Hirohiko; Haga, Naoki; Hayakawa, Akira; Saito, Kiyoshi

CORPORATE SOURCE: Department of Materials Science and Technology, Faculty of Engineering, Toin University of Yokohama, Yokohama, 225, Japan

SOURCE: High Performance Polymers (1998), 10(1), 11-21

CODEN: HPPOEX; ISSN: 0954-0083

PUBLISHER: Institute of Physics Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Preparation and properties of the polyimide derived from cyclobutanetetracarboxylic dianhydride (CBDA) with diamines are investigated, focusing on the interfacial polycondensation of cyclobutanetetracarboxylic acid di-Me ester dichloride (2a) with diamines. Di-Me ester was conveniently prepared from CBDA by refluxing in methanol solution. Di-Me ester consists of two regio isomers; one is  $\alpha$ -type (1a) with centrosymmetry, the other is  $\beta$ -type (1b) with plane symmetry. Separation of the mixture into each of pure 1a and 1b was successfully performed by fractional crystallization. The structure of the first fraction is 1a, which was determined by x-ray crystal anal. The second fraction was necessarily assigned to 1b. 1a was converted into 2a by the reaction with thionyl chloride. The interfacial polycondensation of 2a with diamines afforded a high mol. weight polyamic ester. Polyimide was obtained only by heating the

polyamic ester to about 230-280°C. The cyclobutane polyimide thus obtained was thermally stable up to 400°C, and less stable under hydrolysis than polypyromellitimide.

IT 205655-16-9P, 1,2,3,4-Cyclobutanetetracarboxylic acid 1,3-dimethyl ester-2,4-dibutylamide

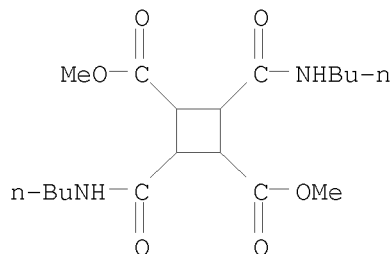
RL: SPN (Synthetic preparation); PREP (Preparation)

(model compound; preparation and properties of high mol. weight polyamic esters

having a cyclobutane moiety in the main chain)

RN 205655-16-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[(butylamino)carbonyl]-, dimethyl ester (9CI) (CA INDEX NAME)



IT 2957-97-3P, 1,2,3,4-Cyclobutanetetracarboxylic acid 1,3-dimethyl ester 91109-83-0P, 1,2,3,4-Cyclobutanetetracarboxylic acid 1,2-dimethyl ester 205655-11-4P,

1,2,3,4-Cyclobutanetetracarboxylic acid 1,3-dimethyl

ester-2,4-dichloride-hexamethylenediamine copolymer, polyamic acid sru

205655-14-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid 1,3-dimethyl

ester-2,4-dichloride-4,4'-oxydianiline copolymer, polyamic acid sru

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP

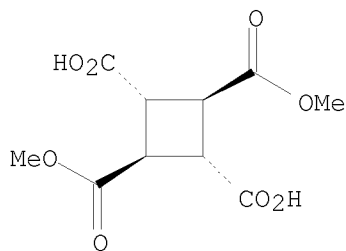
(Preparation); RACT (Reactant or reagent)

(preparation and properties of high mol. weight polyamic esters having a cyclobutane moiety in the main chain)

RN 2957-97-3 CAPLUS

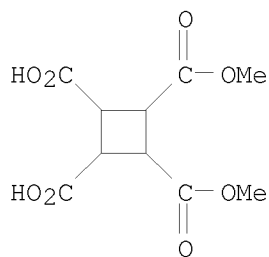
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester, (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

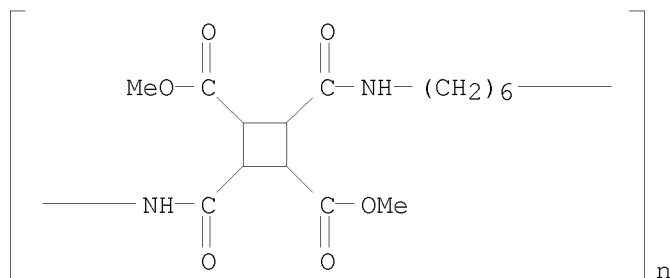


RN 91109-83-0 CAPLUS

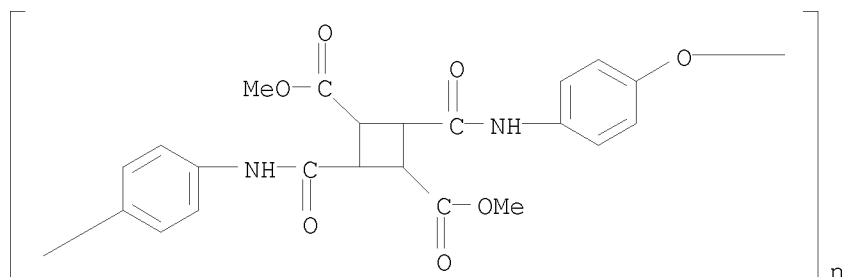
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester (CA INDEX NAME)



RN 205655-11-4 CAPLUS  
 CN Poly[iminocarbonyl[2,4-bis(methoxycarbonyl)-1,3-cyclobutanediyl]carbonylimino-1,6-hexanediyl] (9CI) (CA INDEX NAME)



RN 205655-14-7 CAPLUS  
 CN Poly[oxy-1,4-phenyleneiminocarbonyl[2,4-bis(methoxycarbonyl)-1,3-cyclobutanediyl]carbonylimino-1,4-phenylene] (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 60 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1997:719610 CAPLUS  
 DOCUMENT NUMBER: 128:55414  
 ORIGINAL REFERENCE NO.: 128:10705a,10708a  
 TITLE: Ink-jet printing sheet for transparency preparation  
 INVENTOR(S): Malhotra, Shadi L.; Naik, Kirit N.; MacKinnon, David N.; Jones, Arthur Y.  
 PATENT ASSIGNEE(S): Xerox Corp., USA  
 SOURCE: U.S., 20 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

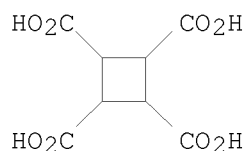
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5683793	A	19971104	US 1996-657134	19960603
PRIORITY APPLN. INFO.:			US 1996-657134	19960603

AB The title printing sheet comprises a supporting substrate, there over a first coating layer comprised of an ink-absorbing layer and a biocide and a second ink-spreading coating layer comprised of a hydrophilic vinyl binder, a dye mordant, a filler, an optional light fastness-inducing agent, and an ink spot size-increasing agent selected from the group consisting of hydroxy acids, amino acids, and polycarboxyl compds., wherein the first coating layer is in contact with the substrate and is situated between the substrate and the second ink coating layer and the transparency prepared possesses a haze value of from about 0.5 to about 10 and a light fastness value of from about 95 to about 98.

IT 53159-92-5, 1,2,3,4-Cyclobutane tetracarboxylic acid  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (ink-jet printing sheets for transparency preparation containing)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 61 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:436082 CAPLUS

DOCUMENT NUMBER: 127:50632

ORIGINAL REFERENCE NO.: 127:9661a,9664a

TITLE: Preparation of cyclic amic acid derivatives as inhibitors of protein-farnesyl transferase and antitumor agents

INVENTOR(S): Iwasawa, Yoshikazu; Aoyama, Tetsuya; Kawakami, Kumiko; Arai, Sachie; Satoh, Toshihiko; Monden, Yoshiaki

PATENT ASSIGNEE(S): Banyu Pharmaceuticals Co., Ltd., Japan

SOURCE: PCT Int. Appl., 100 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9717321	A1	19970515	WO 1996-JP3239	19961106
W: AU, CA, CN, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9675051	A	19970529	AU 1996-75051	19961106
PRIORITY APPLN. INFO.:			JP 1995-313625	A 19951107
			WO 1996-JP3239	W 19961106
OTHER SOURCE(S):		MARPAT 127:50632		
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Compds. of general formula [I; wherein Ar1, Ar2 and Ar3 = aryl or

heteroaryl; Cy = aryl, heteroaryl, alicyclic; Q = (CH<sub>2</sub>)<sub>m</sub> (m = an integer of 1 to 6) or (CH<sub>2</sub>)<sub>n</sub>-W-(CH<sub>2</sub>)<sub>p</sub> (W = oxygen, sulfur, vinylene or ethynylene; n, p = an integer of 0 to 3); R<sub>1</sub> = H, halo, OH, (un)substituted lower alkyl or alkoxy; R<sub>2</sub>, R<sub>7</sub>, R<sub>8</sub> = H, halo, OH, lower alkyl or alkoxy; R<sub>3</sub>, R<sub>4</sub> = H, halo, OH, NH<sub>2</sub>, NO<sub>2</sub>, cyano, CO<sub>2</sub>H, lower alkoxy carbonyl, CONH<sub>2</sub>, lower alkyl carbamoyl, lower alkyl, hydroxyalkyl, fluoroalkyl, or alkoxy; R<sub>5</sub> = lower alkyl; R<sub>6</sub> = H, lower alkyl; R<sub>9</sub>, R<sub>10</sub> = H, OH, lower alkyl; R<sub>11</sub> = OH, CO<sub>2</sub>H, lower alkyl, hydroxyalkyl, or alkoxy; p, n = an integer of 0 to 2; m = 0 or 1] or pharmaceutically acceptable salts and esters thereof are prepared. An antitumor agent containing I as the active ingredient is claimed. Thus, a 5-carbamoyl-1,3-dioxolane-2,2,4-tricarboxylic acid derivative (II; R = CHO, R<sub>12</sub> = Me, R<sub>13</sub> = Et) (preparation given) underwent Wittig reaction with 2-benzoxazolylmethyltriphenylphosphonium chloride using NaH in THF followed by saponification with LiOH in aqueous THF and acidification with 1 N

aqueous HCl

to give II (R = Q, R<sub>12</sub> = R<sub>13</sub> = H). The latter compound in vitro showed IC<sub>50</sub> of 0.1 nM for inhibiting protein-farnesyl transferase and 3.6 nM for inhibiting the farnesylation of Ras protein in activated ras gene-transformed NIH3T3 cells and in vivo inhibited the proliferation of activated human Ha-ras-transformed cells (NIH/ras) transplanted in mice by 23, 41, and 82% at 20, 40, and 80 mg/kg i.p.

IT 191088-21-8P 191166-02-6P 191166-04-8P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

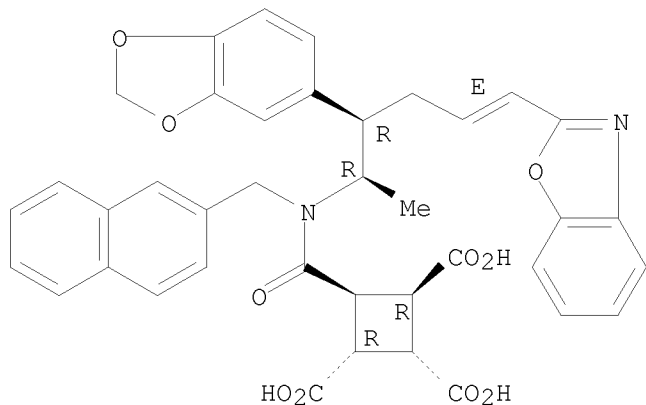
(preparation of cyclic amic acid derivs. as inhibitors of protein-farnesyl transferase and antitumor agents)

RN 191088-21-8 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(1R,2R,4E)-2-(1,3-benzodioxol-5-yl)-5-(2-benzoxazolyl)-1-methyl-4-penten-1-yl](2-naphthalenylmethyl)amino]carbonyl]-,  
(1R,2R,4E)- (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry as shown.



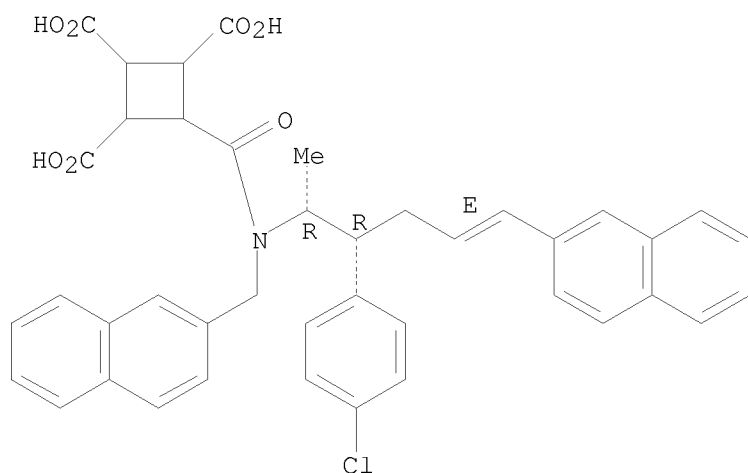
RN 191166-02-6 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(1R,2R,4E)-2-(4-chlorophenyl)-1-methyl-5-(2-naphthalenyl)-4-penten-1-yl](2-naphthalenylmethyl)amino]carbonyl]-, rel- (CA INDEX NAME)

Relative stereochemistry.

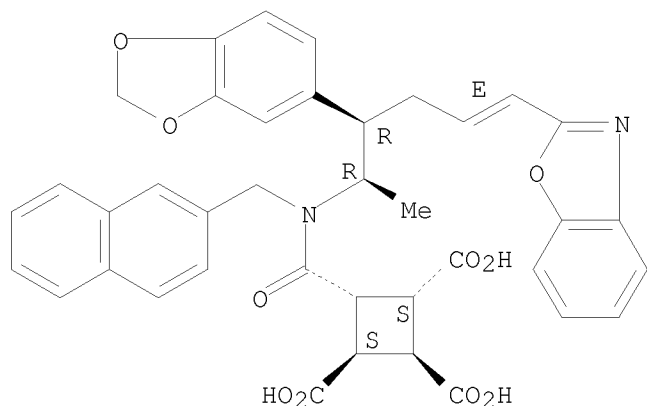
Double bond geometry as shown.



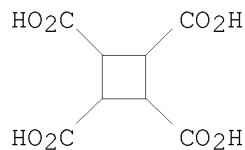


RN 191166-04-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1R,2R,4E)-2-(1,3-benzodioxol-5-yl)-5-(2-benzoxazolyl)-1-methyl-4-penten-1-yl](2-naphthalenylmethyl)amino]carbonyl]-,  
 (1S,2 $\alpha$ ,3S,4 $\beta$ )- (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.



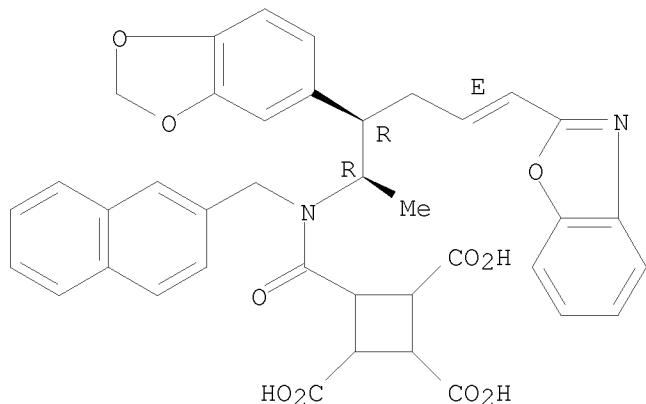
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of cyclic amic acid derivs. as inhibitors of protein-farnesyl transferase and antitumor agents)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



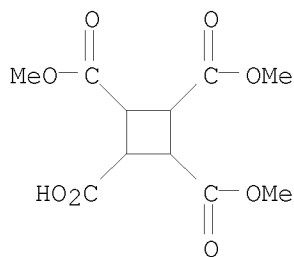
IT 191166-09-3P 191166-13-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of cyclic amic acid derivs. as inhibitors of protein-farnesyl transferase and antitumor agents)

RN 191166-09-3 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(1R,2R,4E)-2-(1,3-benzodioxol-5-yl)-5-(2-benzoxazolyl)-1-methyl-4-  
penten-1-yl](2-naphthalenylmethyl)amino]carbonyl]- (CA INDEX NAME)

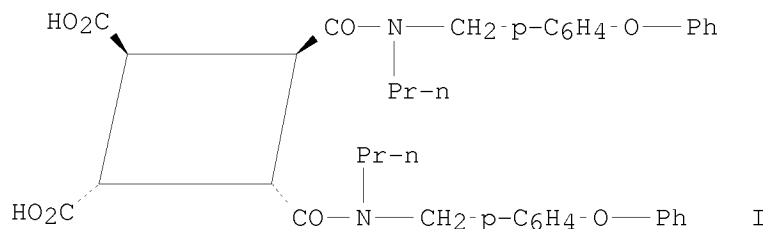
Absolute stereochemistry.  
Double bond geometry as shown.



RN 191166-13-9 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3-trimethyl ester (CA INDEX NAME)



L4 ANSWER 62 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1997:436018 CAPLUS  
DOCUMENT NUMBER: 127:75832  
ORIGINAL REFERENCE NO.: 127:14317a,14320a  
TITLE: (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )-1,2-Bis[[N-propyl-N-(4-phen- oxybenzyl)amino]carbonyl]cyclobutane-3,4-di-carboxylic acid (A-87049): A Novel Potent Squalene Synthase Inhibitor  
AUTHOR(S): Fung, Anthony K. L.; Baker, William R.; Fakhoury, Steven; Stein, Herman H.; Cohen, Jerry; Donner, Bernard G.; Garvey, David S.; Spina, Kenneth P.; Rosenberg, Saul H.  
CORPORATE SOURCE: Aging and Degenerative Diseases Research  
Pharmaceutical Discovery, Abbott Laboratories, Abbott Park, IL, 60064-3500, USA  
SOURCE: Journal of Medicinal Chemistry (1997), 40(14), 2123-2125  
CODEN: JMCMAR; ISSN: 0022-2623  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



AB One of the most effective ways of reducing serum cholesterol is to inhibit sterol biosynthesis. Squalene synthase is a microsomal enzyme which is involved in the first committed step of the de novo cholesterol biosynthetic pathway. The authors prepared and assayed several potent squalene synthase inhibitors. Their inhibitory potencies in the rat liver microsomal enzyme assay ranged from 13-37 nM. Daily administration of 20 mg/kg of A-87049 (I) for 5 days in cynomolgus monkeys resulted in an approx. 12% decrease in total cholesterol and 36% decrease in LDL cholesterol, while HDL cholesterol and triglycerides remained unchanged.

IT 169941-79-1P 169941-80-4P 169941-82-6P  
 169941-83-7P 169941-84-8P 169941-86-0P  
 169941-89-3P 169941-90-6P 169941-92-8P  
 185209-30-7P 191846-90-9P 191846-91-0P  
 191846-92-1P

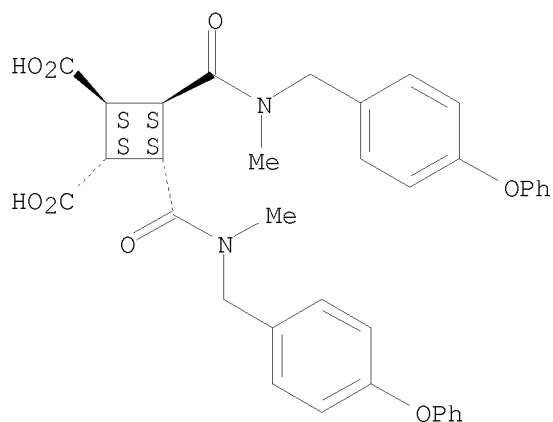
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(synthesis of cholesterol-lowering novel squalene synthase inhibitors)

RN 169941-79-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

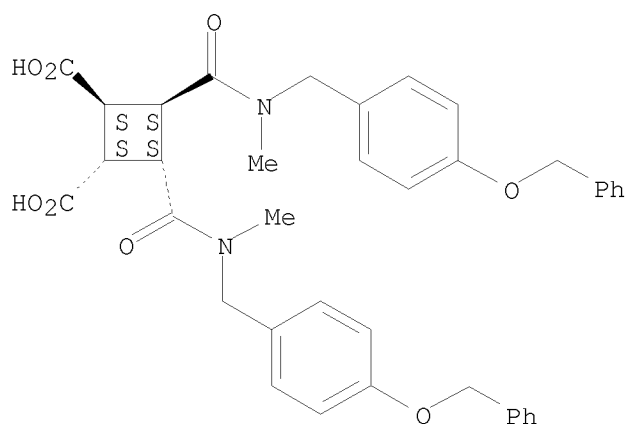
Relative stereochemistry.



RN 169941-80-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[[4-(phenylmethoxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

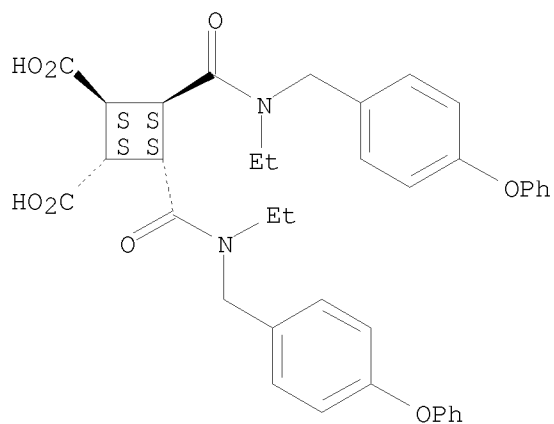
Relative stereochemistry.



RN 169941-82-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ethyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

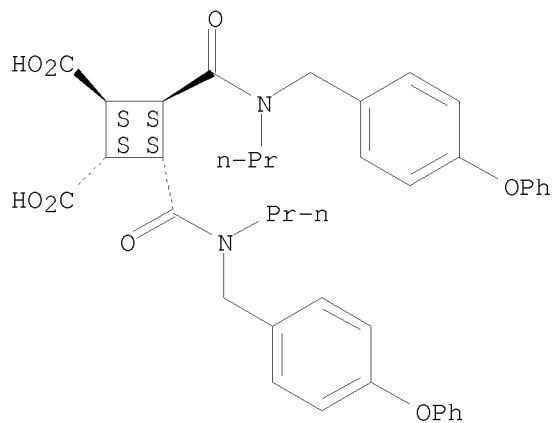
Relative stereochemistry.



RN 169941-83-7 CAPLUS

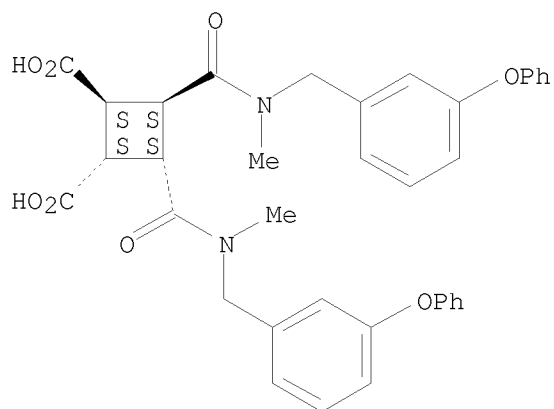
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



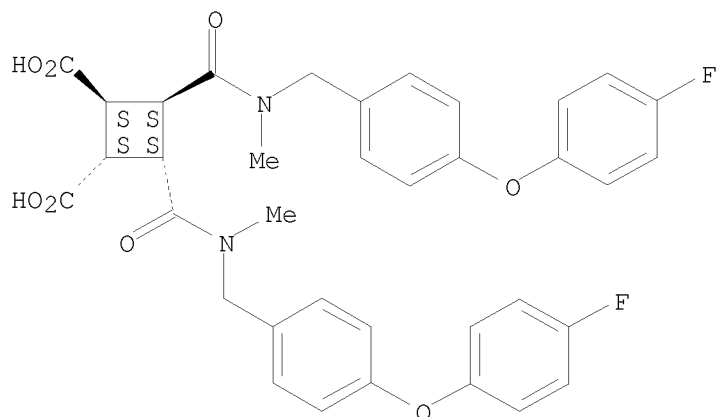
RN 169941-84-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(3-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



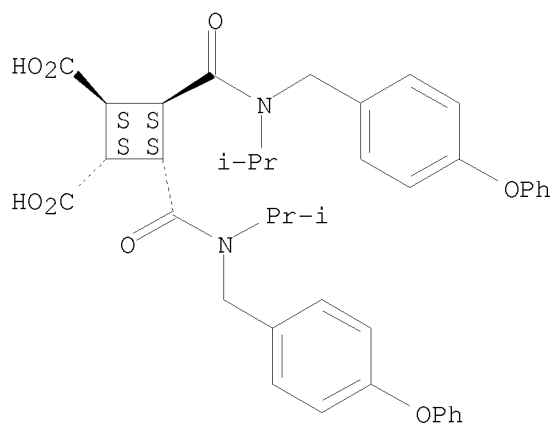
RN 169941-86-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169941-89-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[1-methylethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

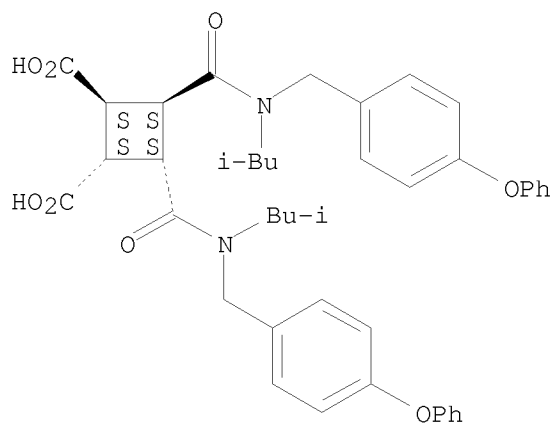
Relative stereochemistry.



RN 169941-90-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-methylpropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

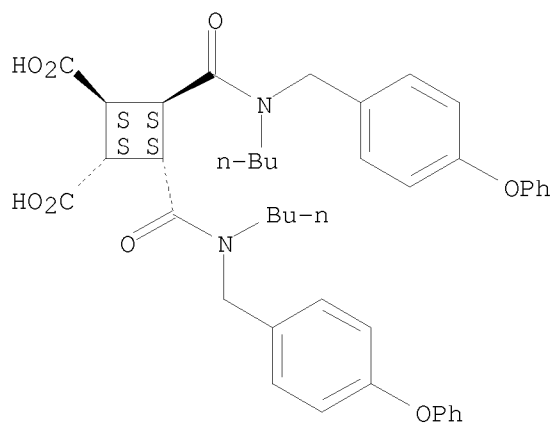
Relative stereochemistry.



RN 169941-92-8 CAPLUS

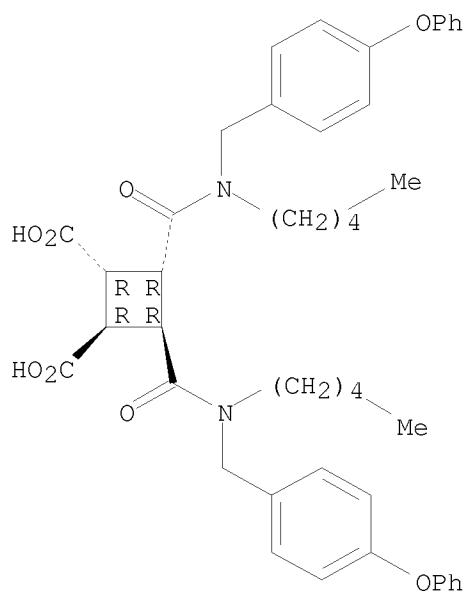
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



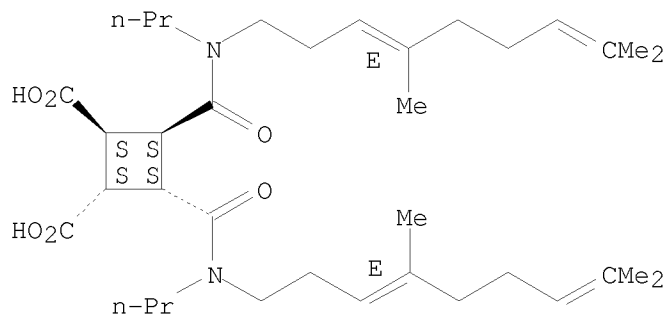
RN 185209-30-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[pentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



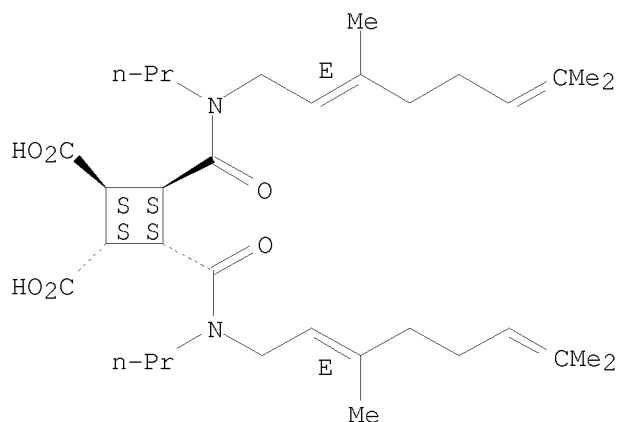
RN 191846-90-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(3E)-4,8-dimethyl-3,7-nonadien-1-yl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



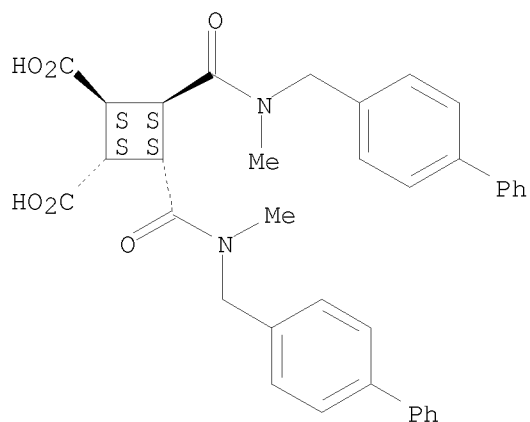
RN 191846-91-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(2E)-3,7-dimethyl-2,6-octadien-1-yl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



RN 191846-92-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[([1,1'-biphenyl]-4-ylmethyl)methylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

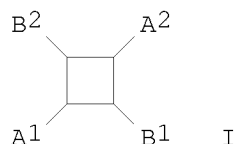


REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 63 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1997:372557 CAPLUS  
 DOCUMENT NUMBER: 127:65594  
 ORIGINAL REFERENCE NO.: 127:12539a,12542a  
 TITLE: Preparation of cyclobutanecarboxamide-derivative inhibitors of protein farnesyltransferase and squalene synthase  
 INVENTOR(S): Stein, Herman H.; Baker, William R.; Fung, Anthony K. L.; Rosenberg, Saul H.; Rockway, Todd W.; Fakhoury, Stephen A.; Garvey, David S.; Donner, B. Gregory; McClellan, William J.; O'Connor, Stephen J.; Prasad, Rajnandan; Shen, Wang; Sullivan, Gerard M.  
 PATENT ASSIGNEE(S): Abbott Laboratories, USA  
 SOURCE: U.S., 49 pp., Cont.-in-part of U.S. Ser. No. 194,366, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5631401	A	19970520	US 1995-378334	19950124
AU 9520444	A	19960801	AU 1995-20444	19950601
PRIORITY APPLN. INFO.:			US 1994-194366	B2 19940209
			US 1995-378334	A 19950126
OTHER SOURCE(S):	MARPAT 127:65594			
GI				



AB The title compds. [I; A1, A2 = CON(R1)R2; R1 = H, (un)substituted alkyl, cycloalkyl, aryl, alkenyl, alkynyl, etc.; R2 = aryl, alkenyl alkynyl, (un)substituted alkyl, etc.; NR1R2 = (un)substituted heterocyclyl; B1, B2 = CO2R7; R7 = H, carboxy-protecting group], useful for inhibiting protein farnesyltransferase and de novo squalene production resulting in the inhibition of cholesterol biosynthesis, are prepared Thus, (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )-1-[N-propyl-N-(4-phenoxybenzyl)aminocarbonyl]-3-[N-benzyl-N-(4-phenoxybenzyl)aminocarbonyl]cyclobutane-2,4-dicarboxylic acid, prepared by the amidation of 1,2,3,4-cyclobutanetetracarboxylic acid dianhydride with N-propyl-4-phenoxybenzyl amine and N-benzyl-4-phenoxybenzyl amine, demonstrated a 94% inhibition of protein farnesyltransferase at 1  $\mu$ M.

IT 171348-74-6P 171348-75-7P 171348-76-8P  
 171348-77-9P 171348-78-0P 171348-79-1P  
 171348-80-4P 171348-81-5P 171348-82-6P  
 171348-83-7P 171348-84-8P 171348-85-9P  
 171348-86-0P 171348-87-1P 171348-88-2P  
 171348-89-3P 171348-90-6P 171348-91-7P  
 171348-92-8P 171348-93-9P 171348-94-0P  
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 171483-67-3P 171483-68-4P 171483-69-5P  
 191284-55-6P 191284-57-8P 191284-59-0P  
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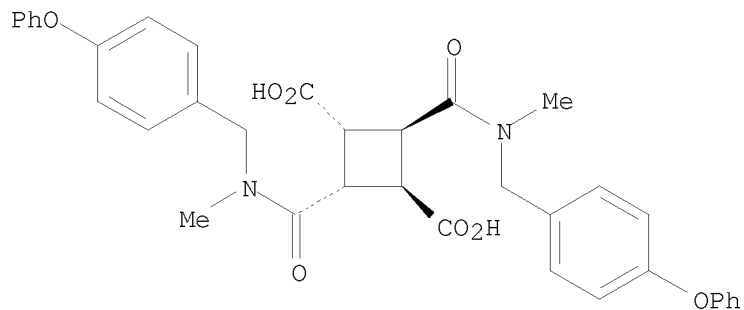
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of cyclobutanecarboxamide-derivative inhibitors of protein  
farnesyltransferase and squalene synthase)

RN 171348-74-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[(4-  
phenoxyphenyl)methyl]amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

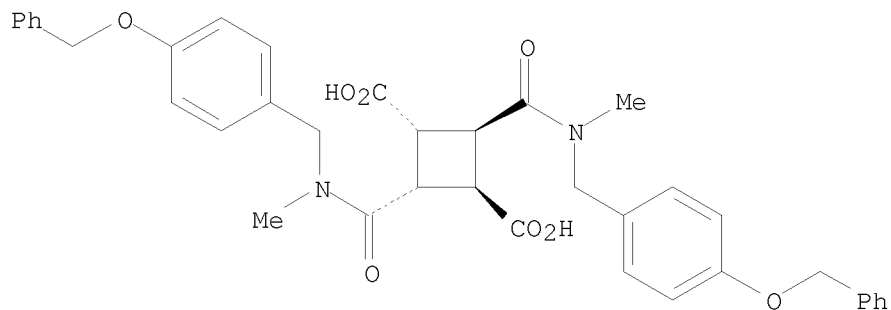
Relative stereochemistry.



RN 171348-75-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[[4-  
(phenylmethoxy)phenyl]methyl]amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

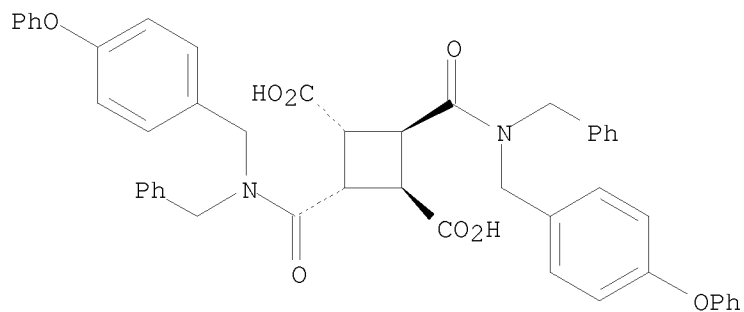
Relative stereochemistry.



RN 171348-76-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-  
phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

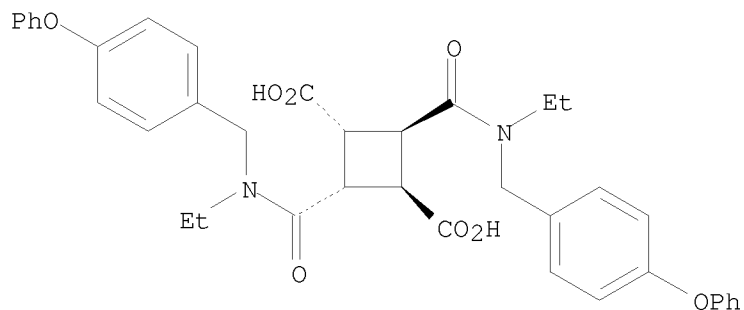
Relative stereochemistry.



RN 171348-77-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ethyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

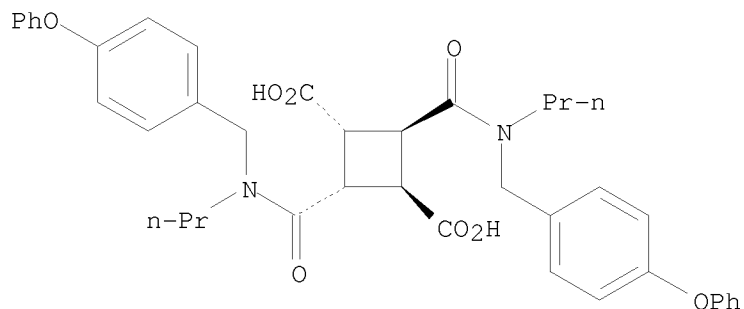
Relative stereochemistry.



RN 171348-78-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

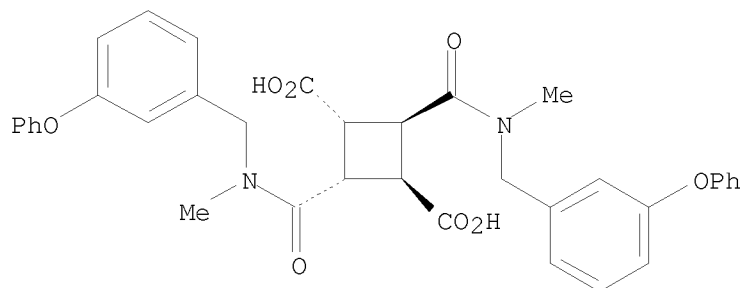
Relative stereochemistry.



RN 171348-79-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[(3-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

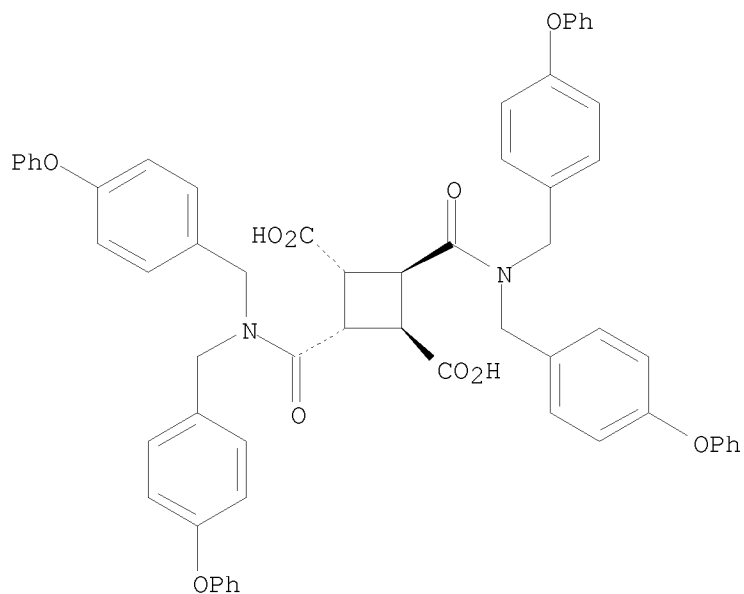
Relative stereochemistry.



RN 171348-80-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

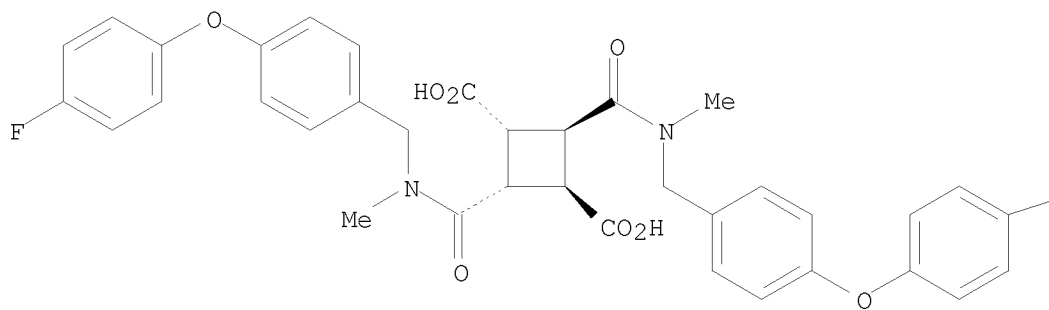


RN 171348-81-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

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PAGE 1-B

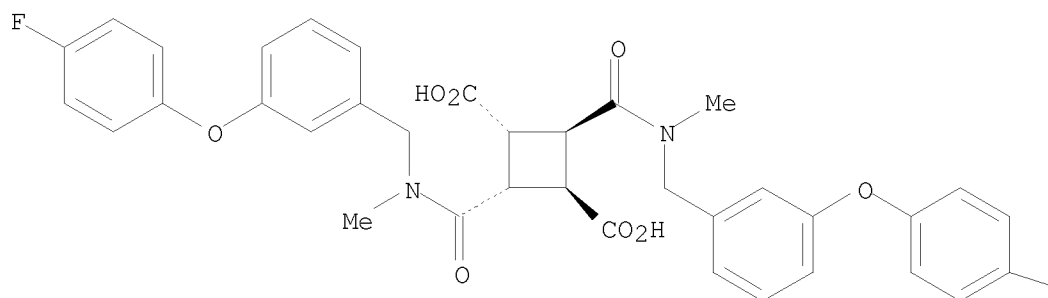
—F

RN 171348-82-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[3-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

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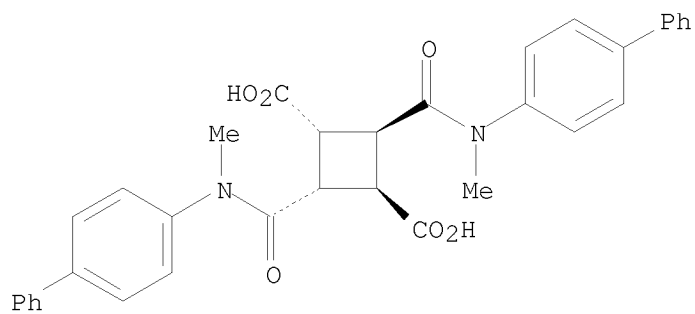


PAGE 1-B



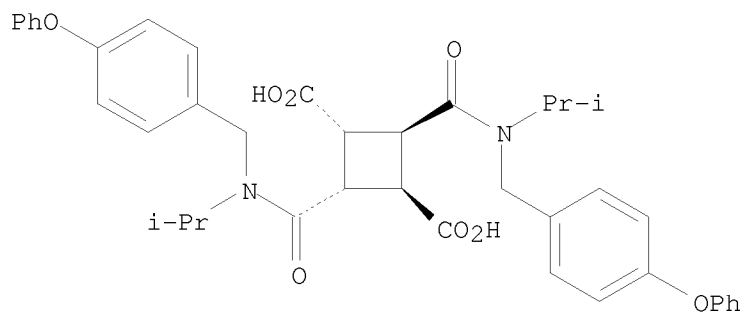
RN 171348-83-7 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(1,1'-biphenyl)-4-ylmethylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



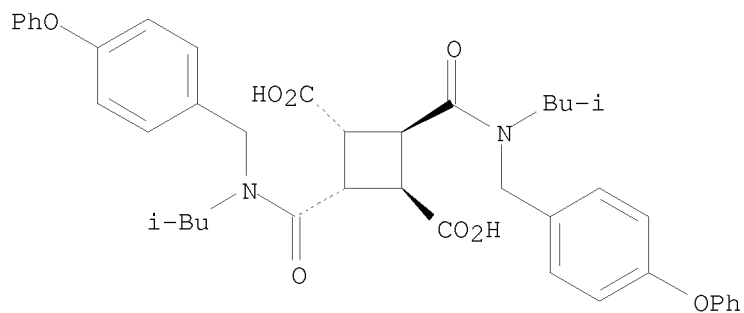
RN 171348-84-8 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(1-methylethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



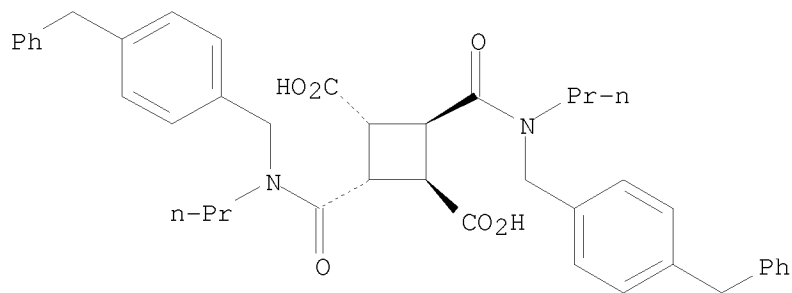
RN 171348-85-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-methylpropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



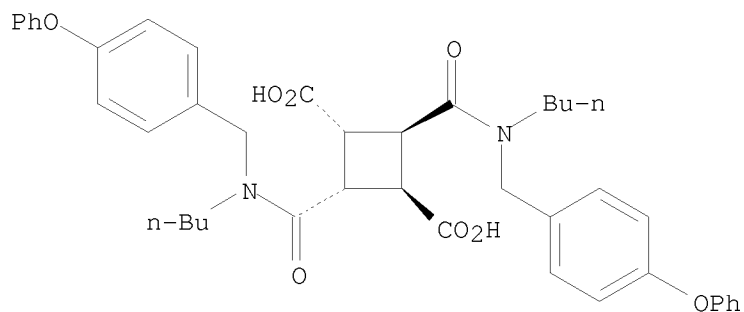
RN 171348-86-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-(phenylmethyl)phenyl)methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



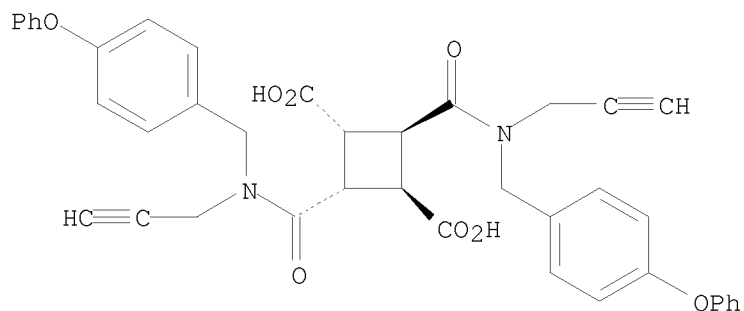
RN 171348-87-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



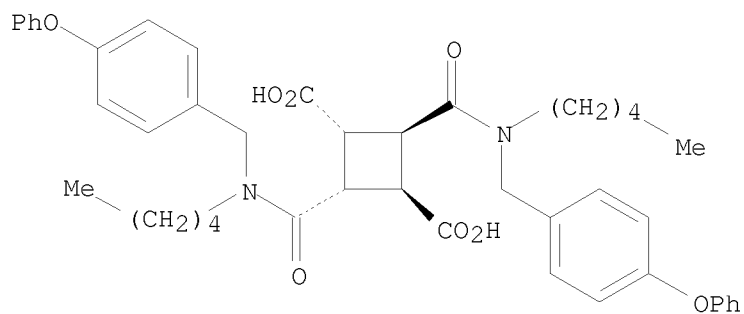
RN 171348-88-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl]-2-propynylamino]carbonyl-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



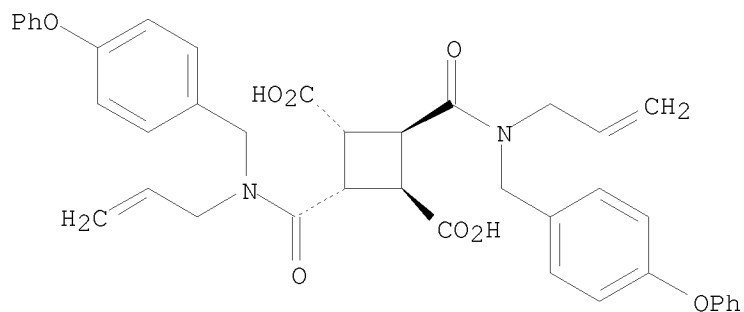
RN 171348-89-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[pentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



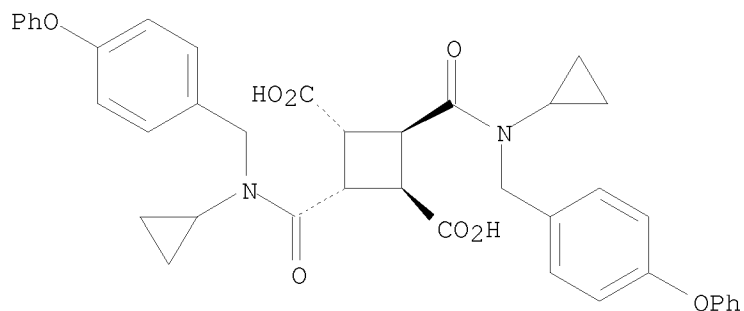
RN 171348-90-6 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl]-2-propen-1-ylamino]carbonyl-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171348-91-7 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclopropyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

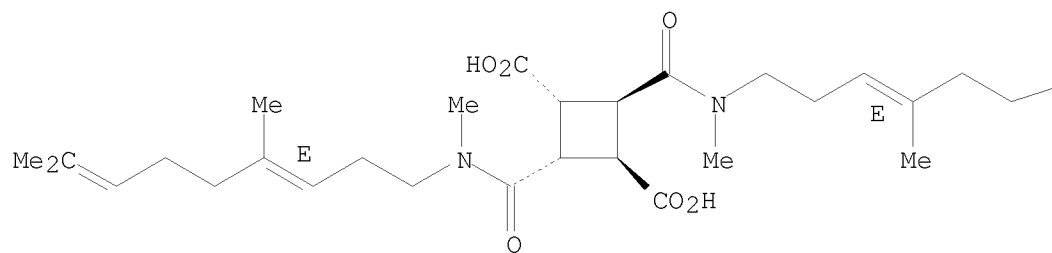
Relative stereochemistry.



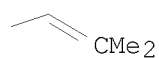
RN 171348-92-8 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (4,8-dimethyl-3,7-nonadienyl)methylamino]carbonyl]-,  
 [1 $\alpha$ ,2 $\alpha$ (E),3 $\beta$ ,4 $\beta$ (E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.

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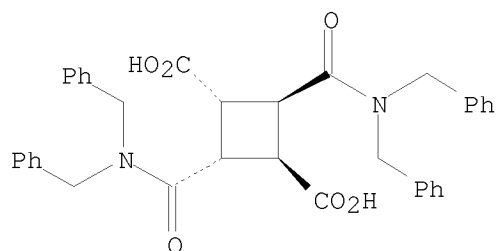


RN 171348-93-9 CAPLUS



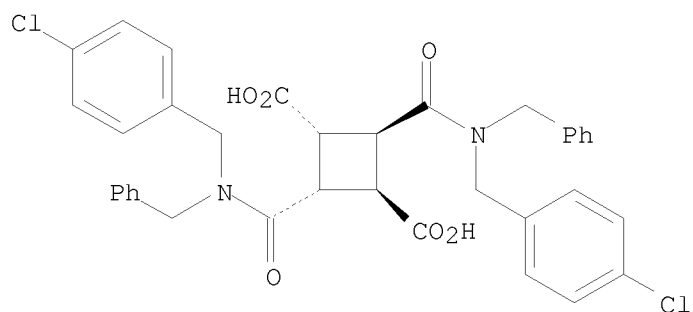
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis(phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



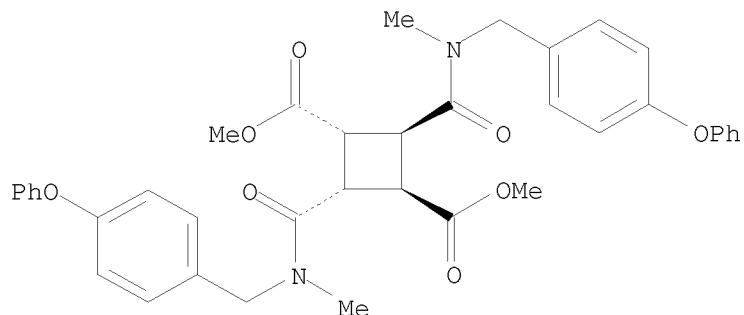
RN 171348-94-0 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-chlorophenyl)methyl](phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



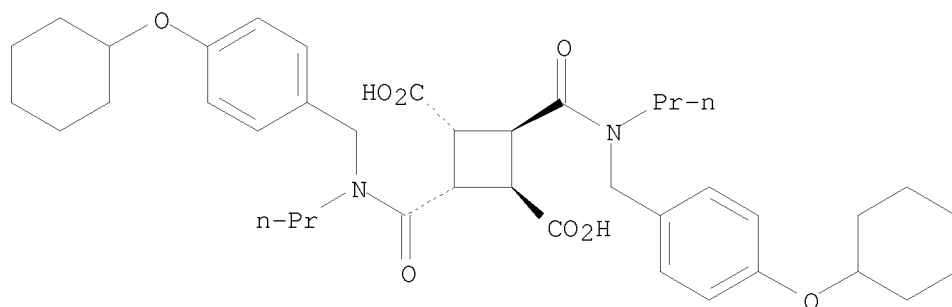
RN 171348-95-1 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, dimethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 171348-97-3 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-(cyclohexyloxy)phenyl)methyl]propylamino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

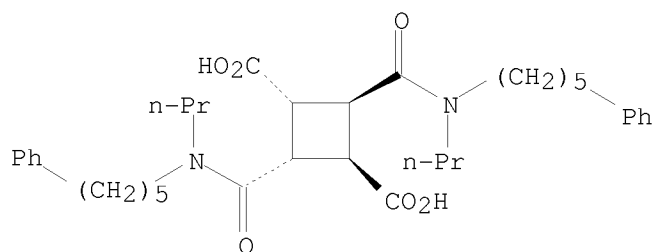
Relative stereochemistry.



RN 171348-98-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(5-phenylpentyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

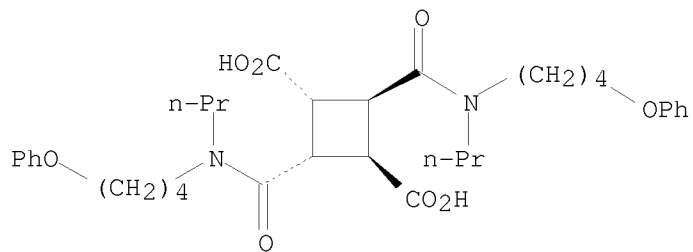
Relative stereochemistry.



RN 171348-99-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxybutyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

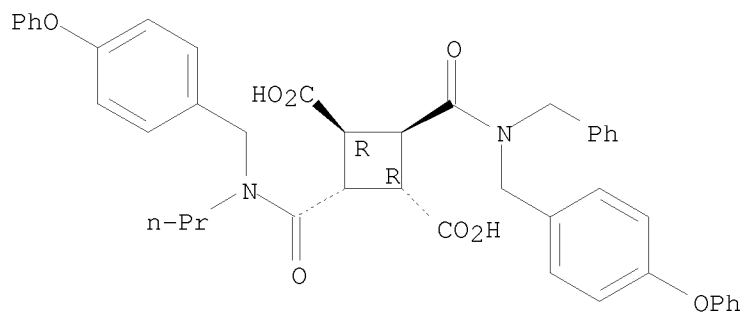
Relative stereochemistry.



RN 171349-00-1 CAPLUS

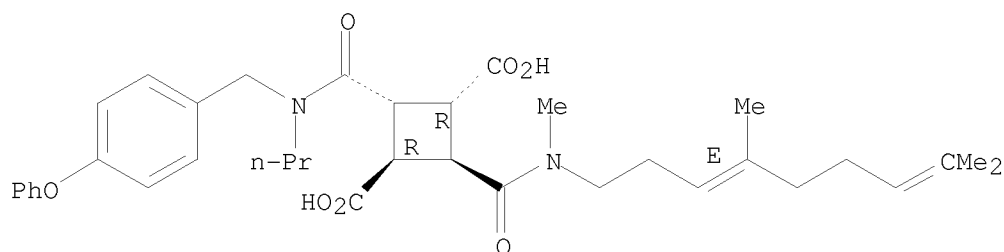
CN 1,3-Cyclobutanedicarboxylic acid, 2-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

Relative stereochemistry.



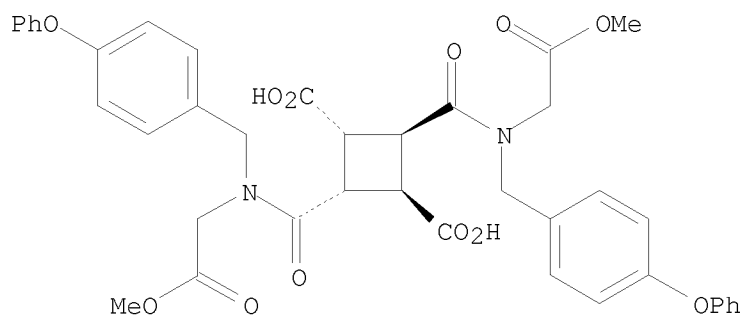
RN 171349-01-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2-[[[(4,8-dimethyl-3,7-nonadienyl)methylamino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, stereoisomer (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



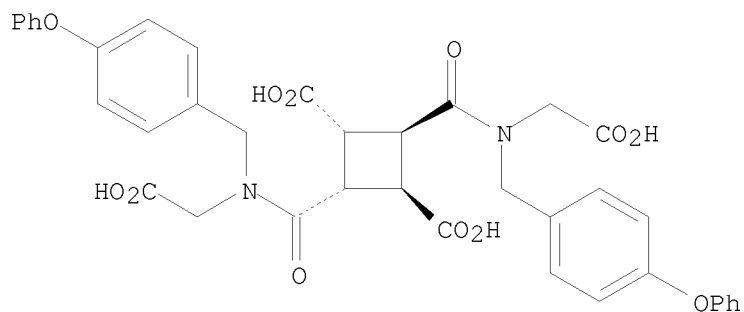
RN 171349-02-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(2-methoxy-2-oxoethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171349-03-4 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(carboxymethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

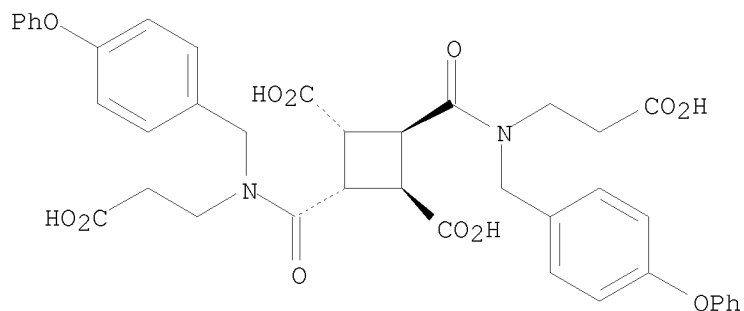
Relative stereochemistry.



RN 171349-04-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-carboxyethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

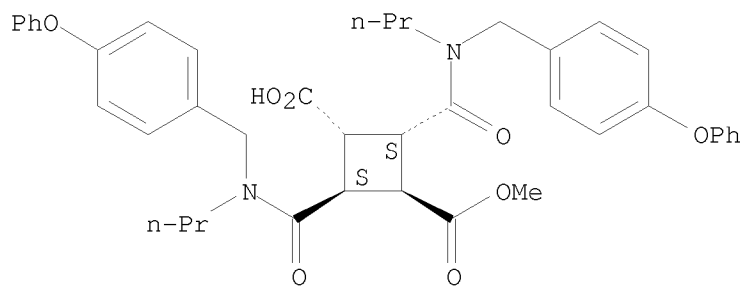
Relative stereochemistry.



RN 171349-05-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

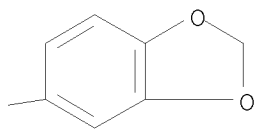
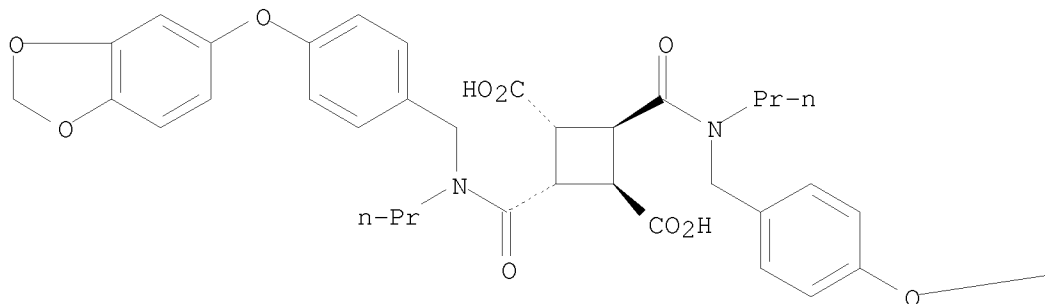
Relative stereochemistry.



RN 171349-06-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(1,3-benzodioxol-5-yloxy)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

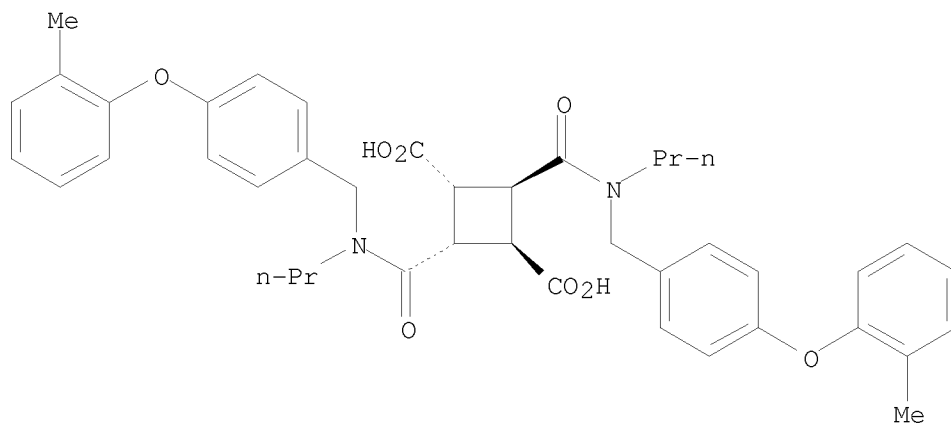
Relative stereochemistry.



RN 171349-09-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(2-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

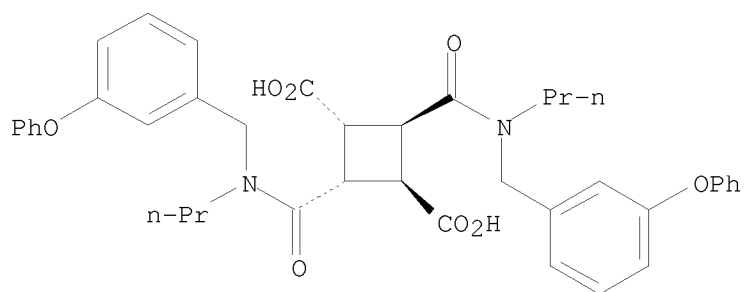
Relative stereochemistry.



RN 171349-10-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[3-phenoxyphenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

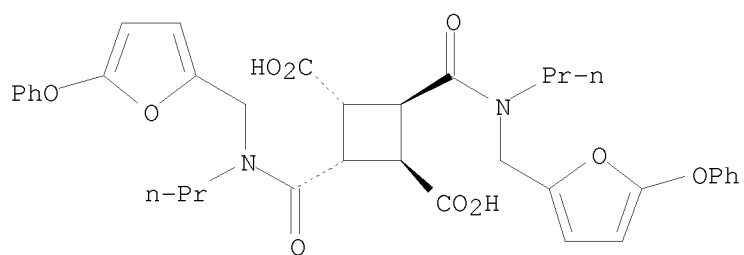
Relative stereochemistry.



RN 171349-11-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(5-phenoxy-2-furanyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

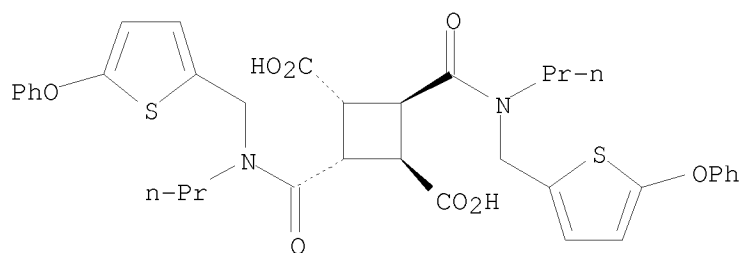
Relative stereochemistry.



RN 171349-12-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(5-phenoxy-2-thienyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

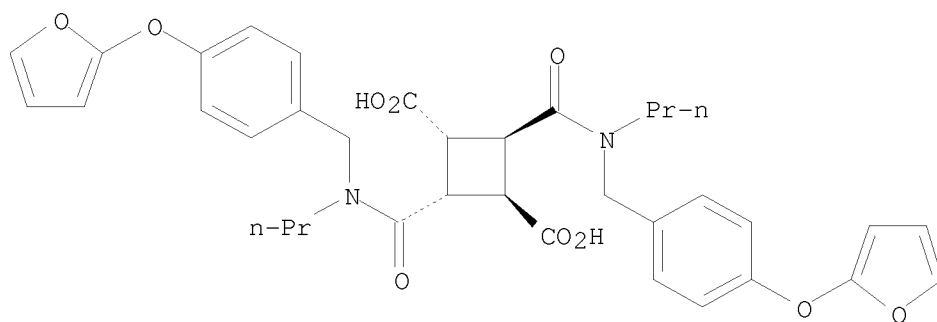
Relative stereochemistry.



RN 171349-13-6 CAPLUS

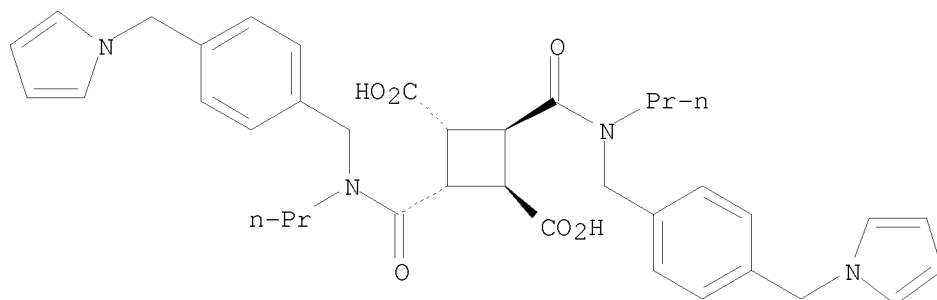
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-(2-furanyloxy)phenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171349-15-8 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[propyl[[4-(1H-pyrrol-1-ylmethyl)phenyl]methyl]amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

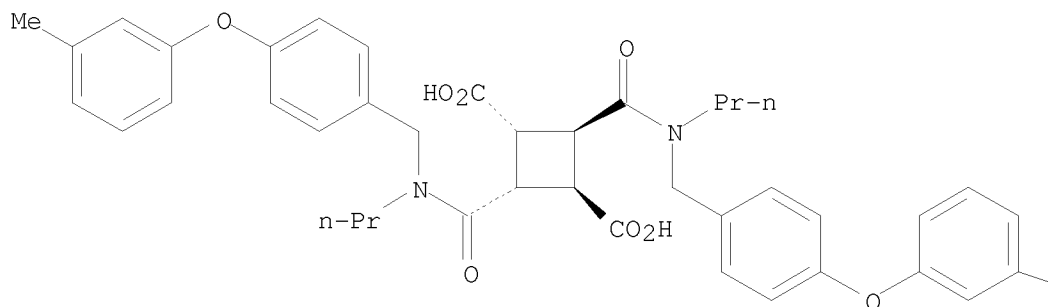
Relative stereochemistry.



RN 171349-16-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(3-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

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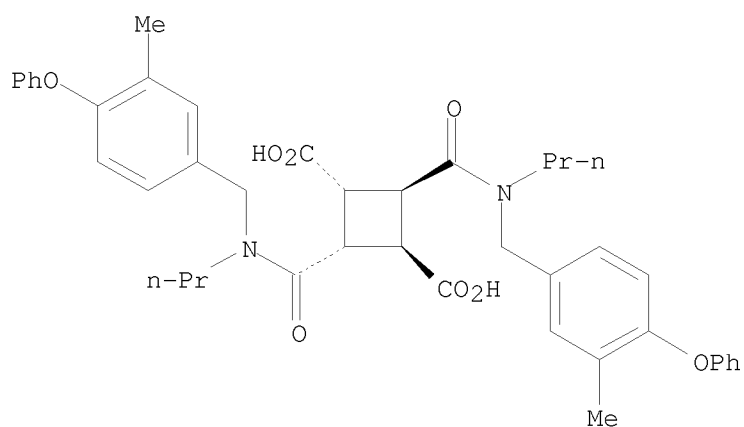




RN 171349-18-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(3-methyl-4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

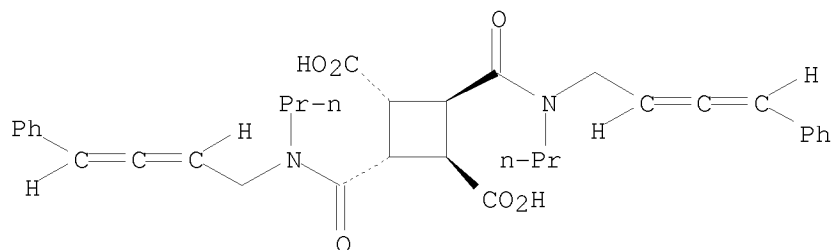
Relative stereochemistry.



RN 171349-19-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-phenyl-2,3-butadien-1-yl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

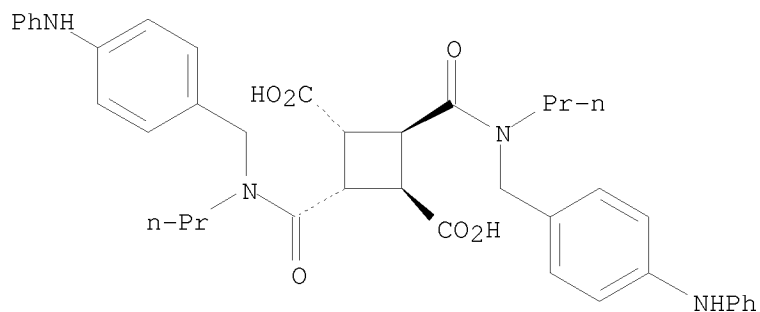


RN 171349-21-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylamino)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

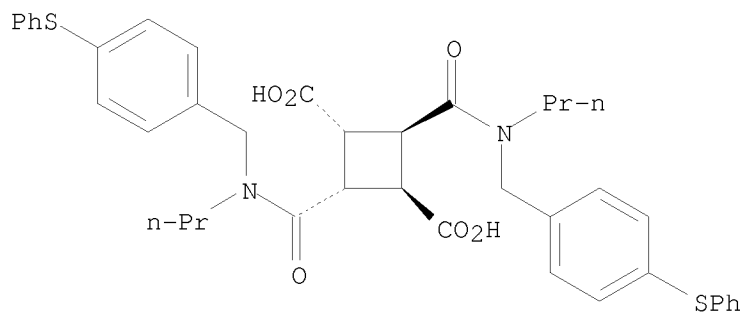




RN 171349-22-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-(phenylthio)phenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

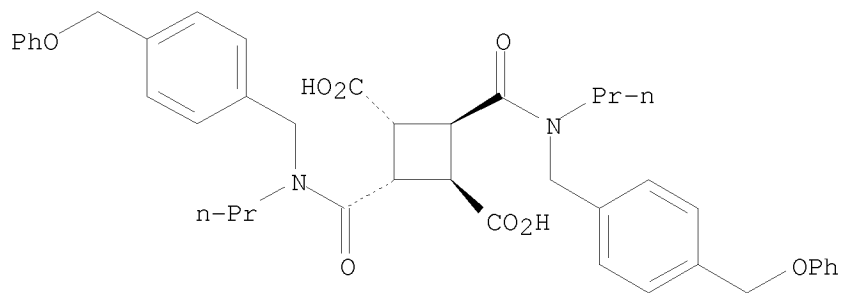
Relative stereochemistry.



RN 171349-23-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-(phenoxyethyl)phenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

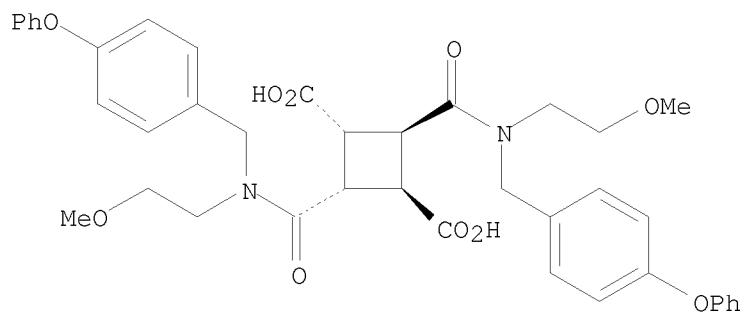
Relative stereochemistry.



RN 171349-24-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-methoxyethyl)(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

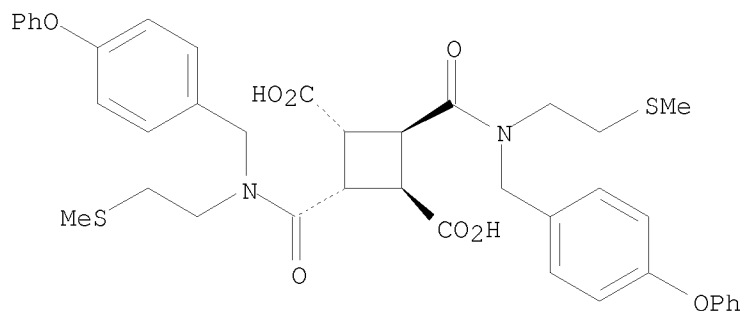
Relative stereochemistry.



RN 171349-25-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(methylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

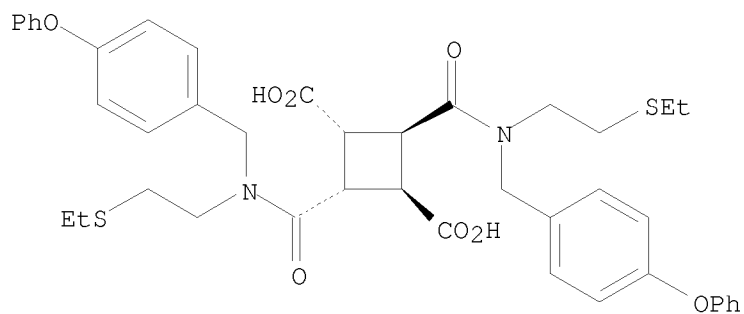
Relative stereochemistry.



RN 171349-26-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(ethylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

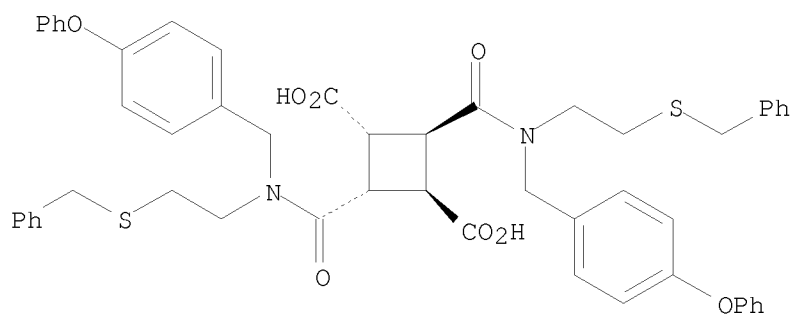
Relative stereochemistry.



RN 171349-27-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl][2-[(phenylmethyl)thio]ethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

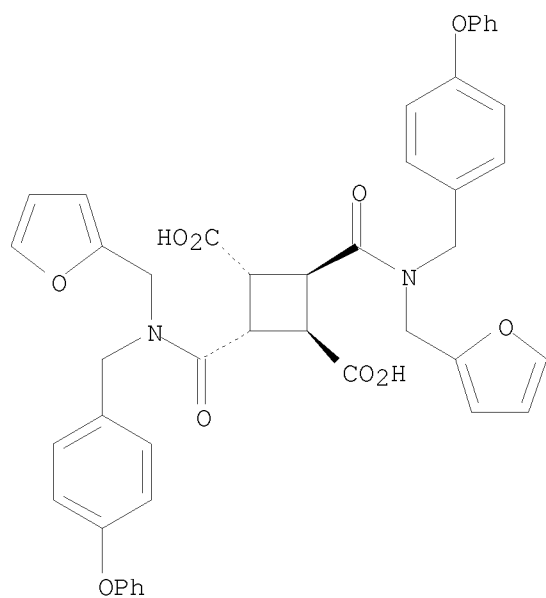
Relative stereochemistry.



RN 171349-28-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-furanylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

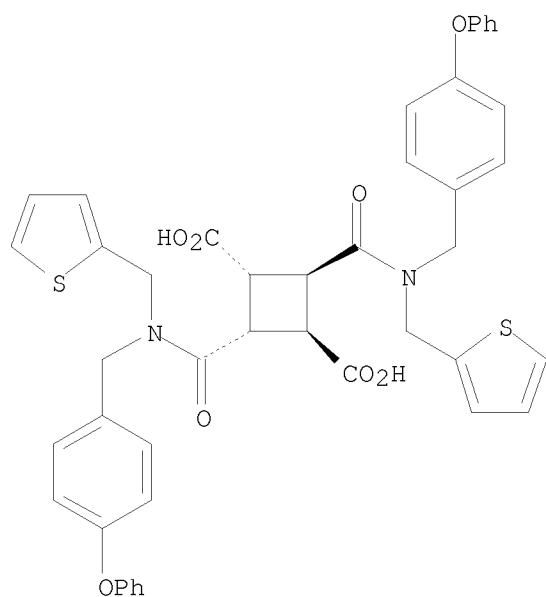
Relative stereochemistry.



RN 171349-29-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

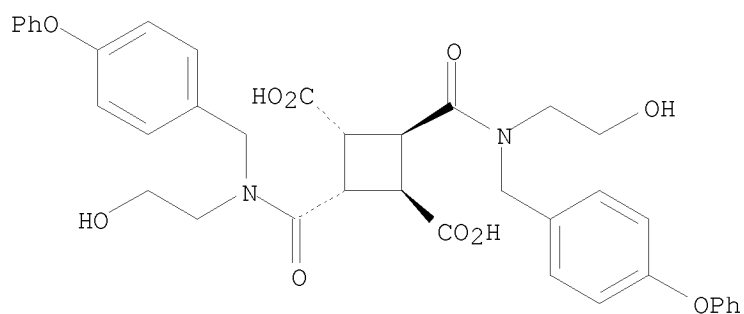
Relative stereochemistry.



RN 171349-30-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-hydroxyethyl)(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

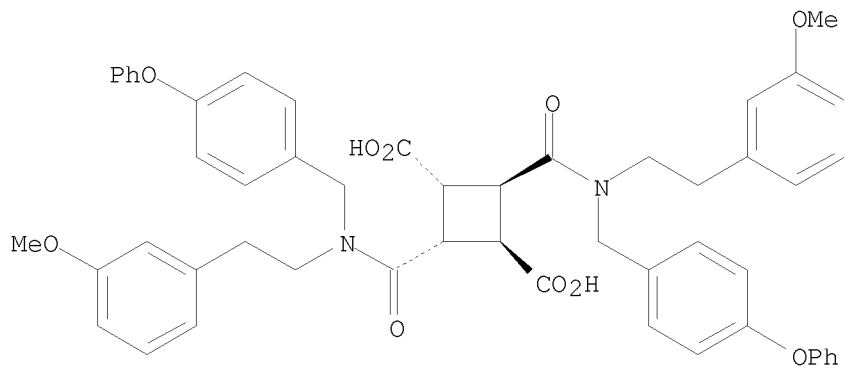
Relative stereochemistry.



RN 171349-31-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-(3-methoxyphenyl)ethyl)(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

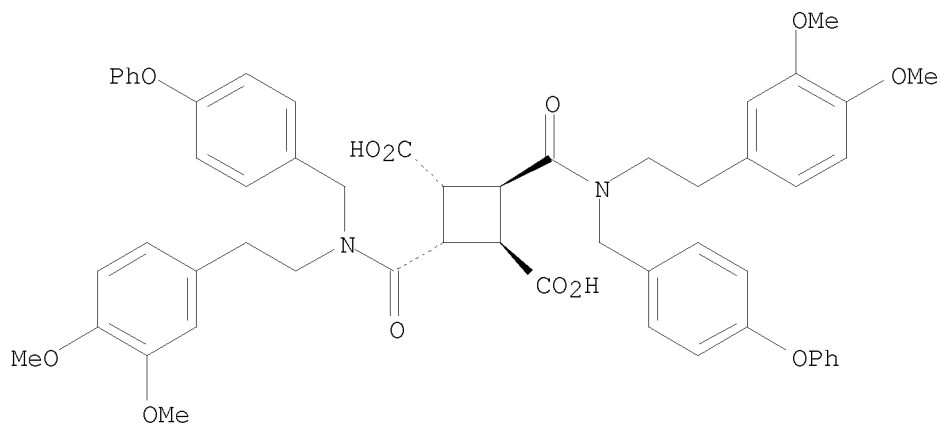
Relative stereochemistry.



RN 171349-32-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(3,4-dimethoxyphenyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

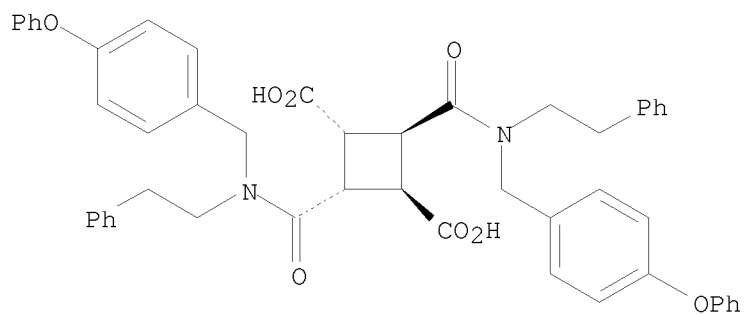
Relative stereochemistry.



RN 171349-33-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl](2-phenylethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

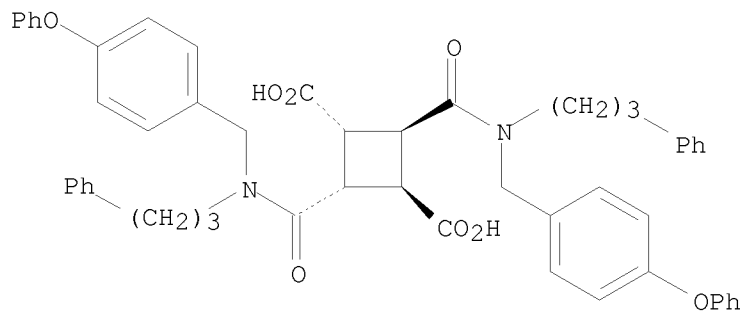
Relative stereochemistry.



RN 171349-34-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl](3-phenylpropyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

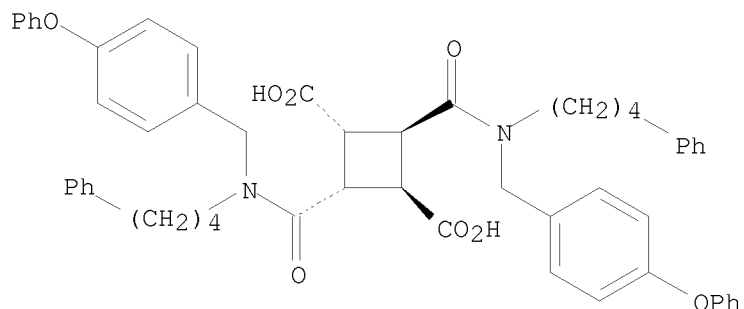
Relative stereochemistry.



RN 171349-35-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl](4-phenylbutyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

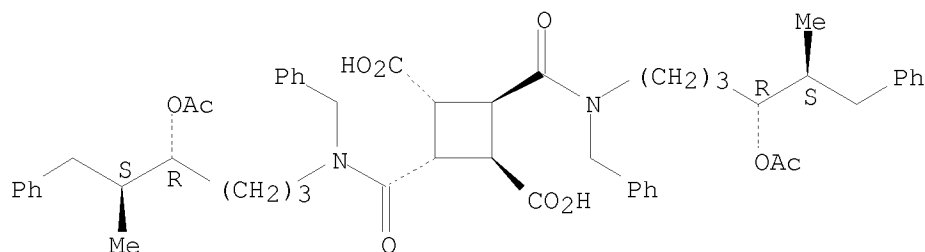
Relative stereochemistry.



RN 171349-39-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(acetyloxy)-5-methyl-6-phenylhexyl](phenylmethyl)amino]carbonyl]-, [1 $\alpha$ ,2 $\alpha$ (4R\*,5S\*),3 $\beta$ ,4 $\beta$ (4R\*,5S\*)]- (9CI) (CA INDEX NAME)

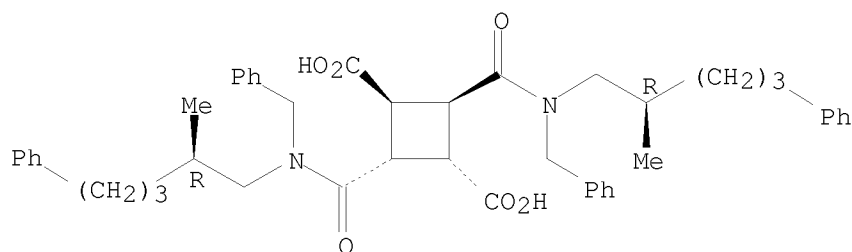
Relative stereochemistry.



RN 171349-40-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(2R)-2-methyl-5-phenylpentyl](phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

Absolute stereochemistry.

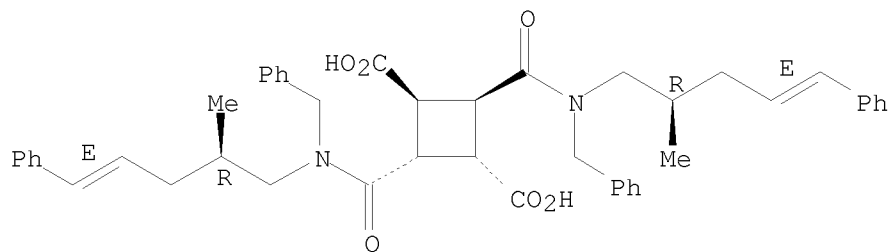


RN 171349-41-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(2R,4E)-2-methyl-5-phenyl-4-penten-1-yl](phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

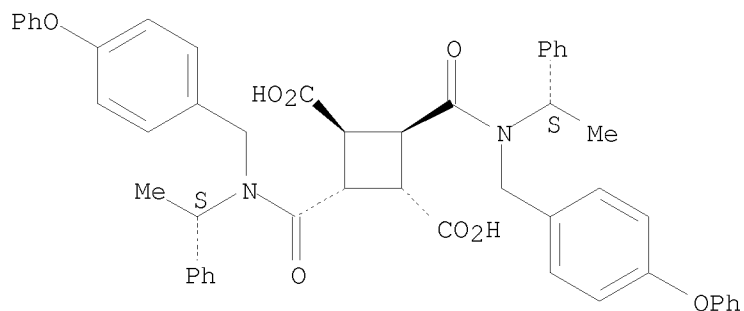
Absolute stereochemistry.

Double bond geometry as shown.



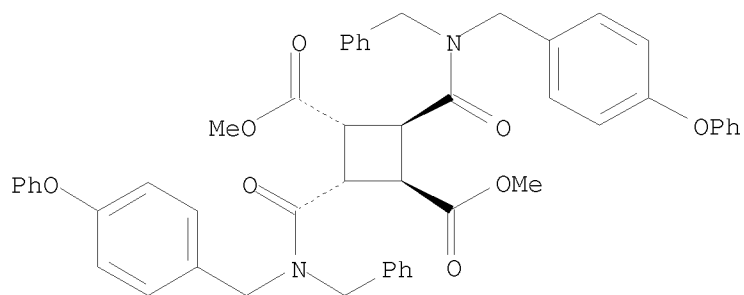
RN 171349-42-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Absolute stereochemistry.



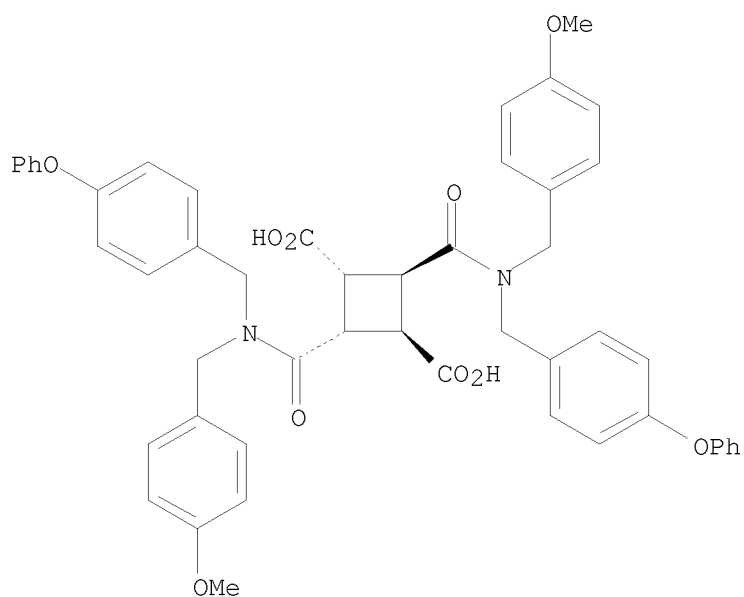
RN 171349-43-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, dimethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 171349-44-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-methoxyphenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

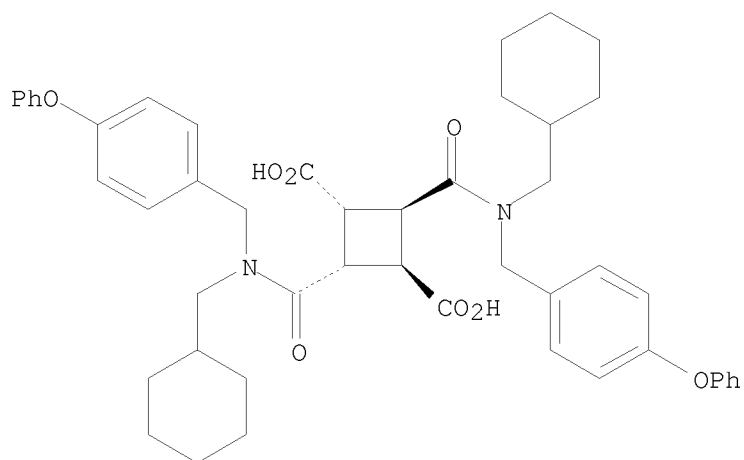
Relative stereochemistry.



RN 171349-45-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(cyclohexylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

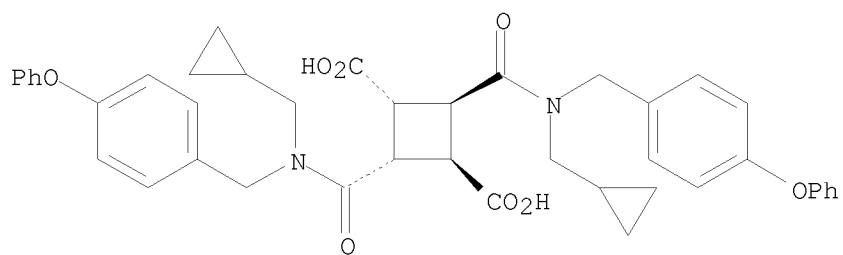


RN 171349-47-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(cyclopropylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

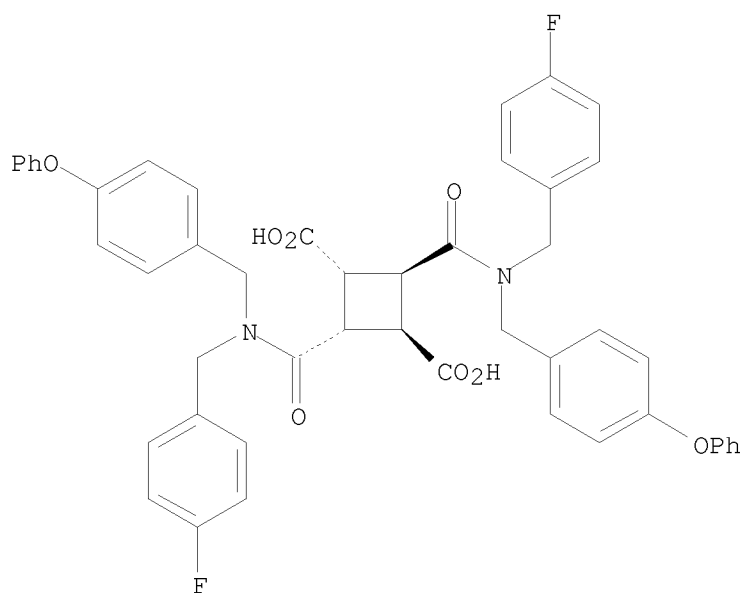




RN 171349-48-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-fluorophenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

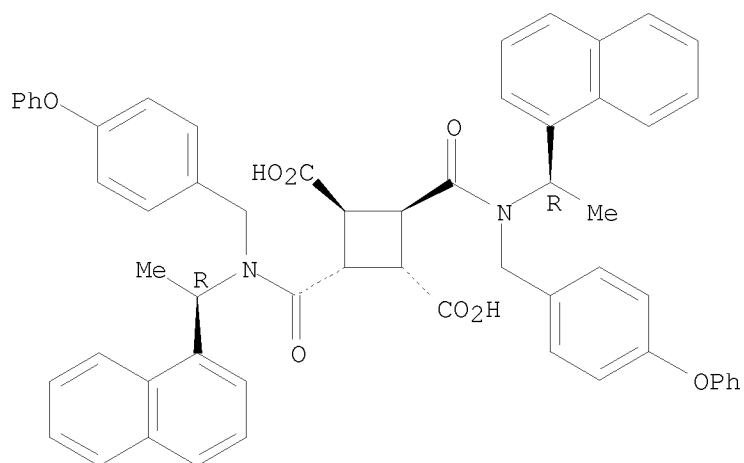
Relative stereochemistry.



RN 171349-50-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(1R)-1-(1-naphthalenyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

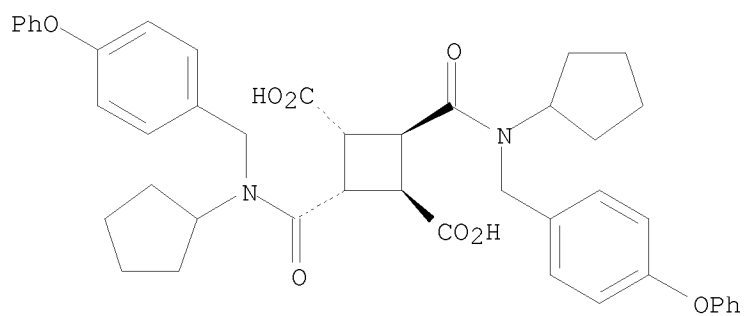
Absolute stereochemistry.



RN 171349-51-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclopentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

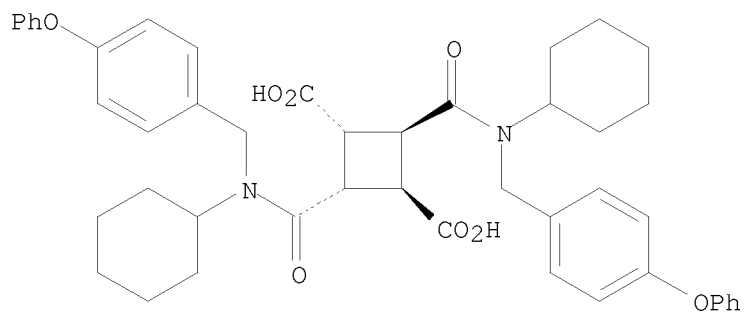
Relative stereochemistry.



RN 171349-52-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclohexyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

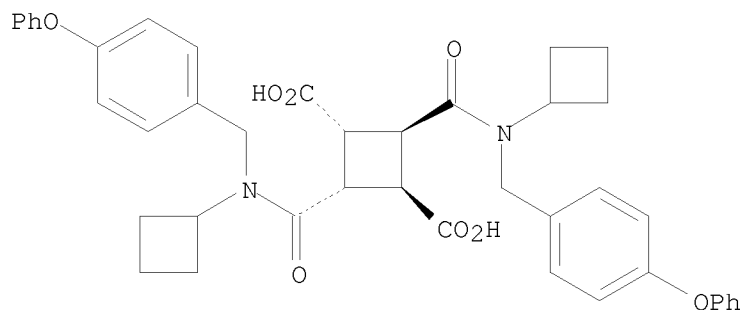
Relative stereochemistry.



RN 171349-53-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclobutyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

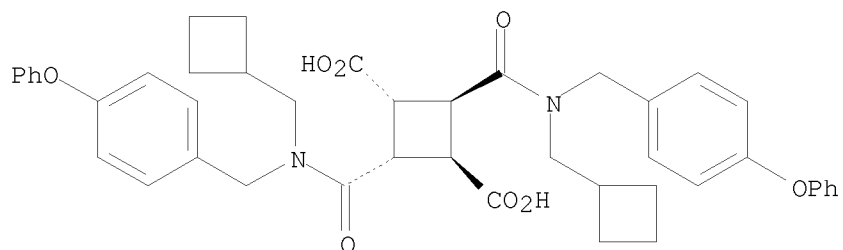
Relative stereochemistry.



RN 171349-54-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(cyclobutylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

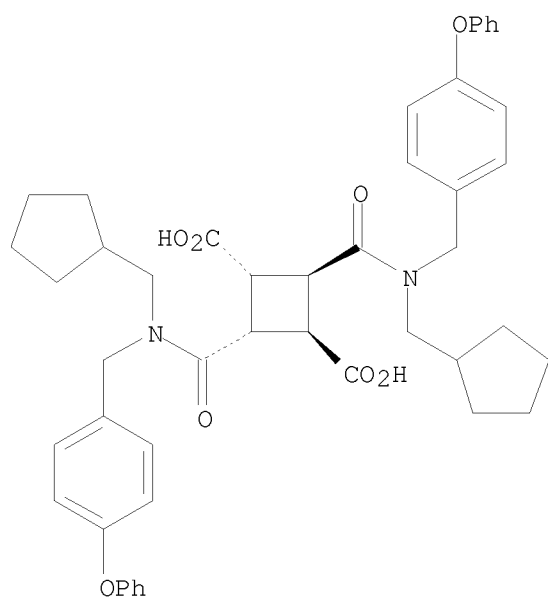
Relative stereochemistry.



RN 171349-55-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(cyclopentylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

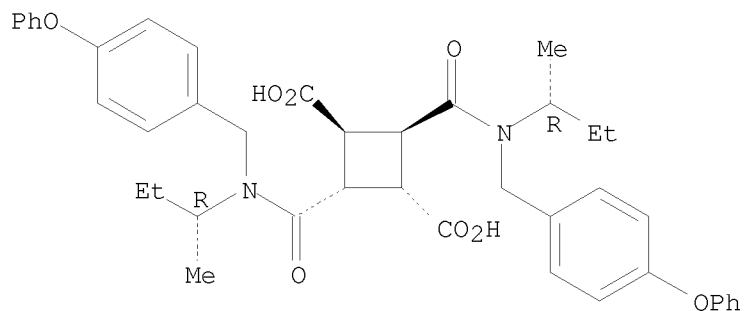
Relative stereochemistry.



RN 171349-56-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(1R)-1-methylpropyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

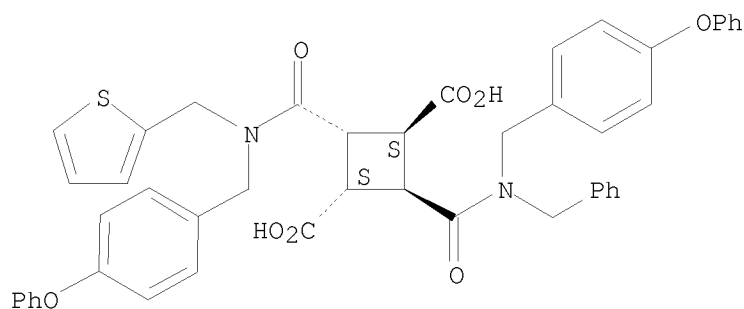
Absolute stereochemistry.



RN 171349-57-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

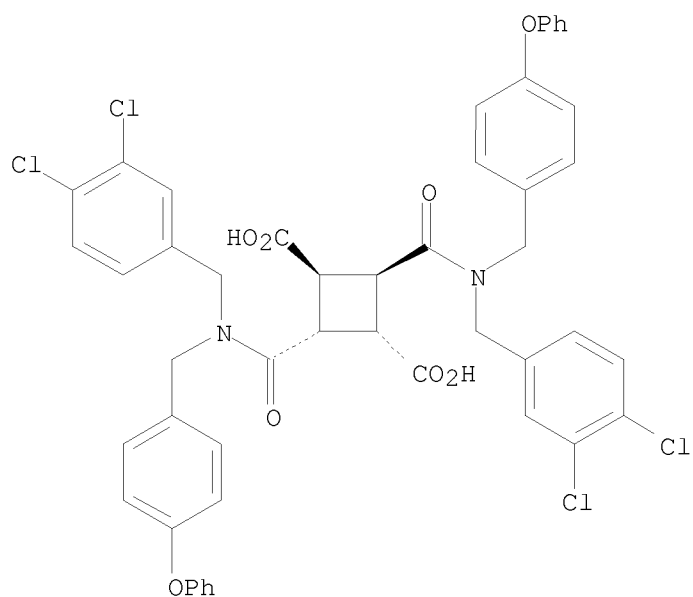
Relative stereochemistry.



RN 171349-58-9 CAPLUS

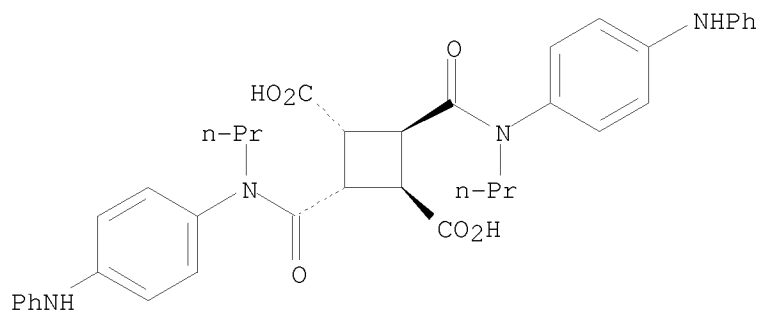
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(3,4-dichlorophenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



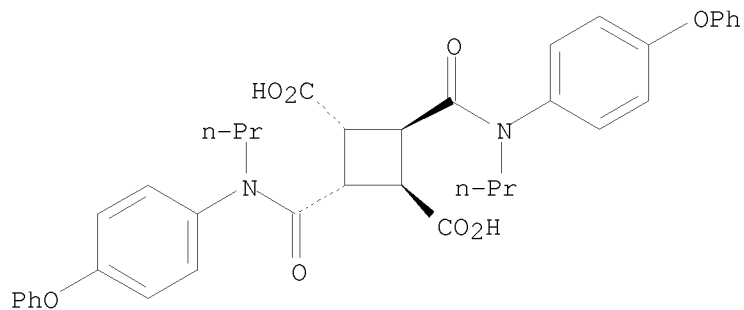
RN 171483-66-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171483-67-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenoxyphenyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

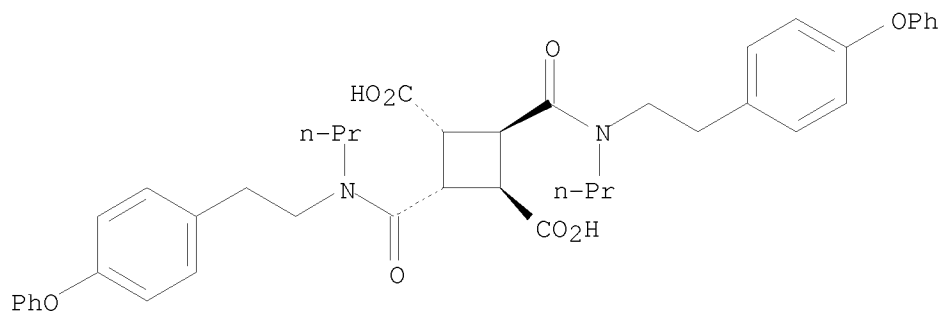
Relative stereochemistry.



RN 171483-68-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

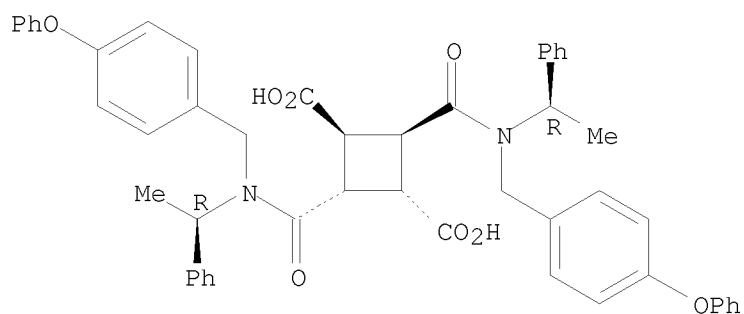
Relative stereochemistry.



RN 171483-69-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl][(1R)-1-phenylethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

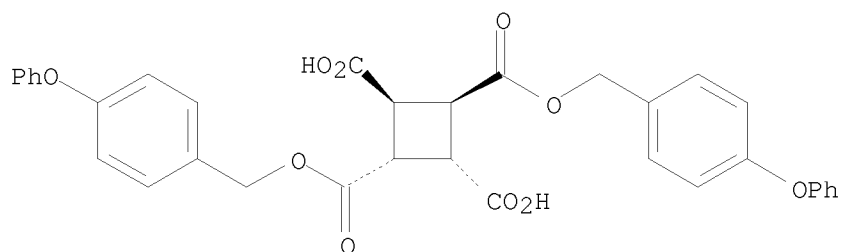
Absolute stereochemistry.



RN 191284-55-6 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-bis[(4-phenoxyphenyl)methyl] ester, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

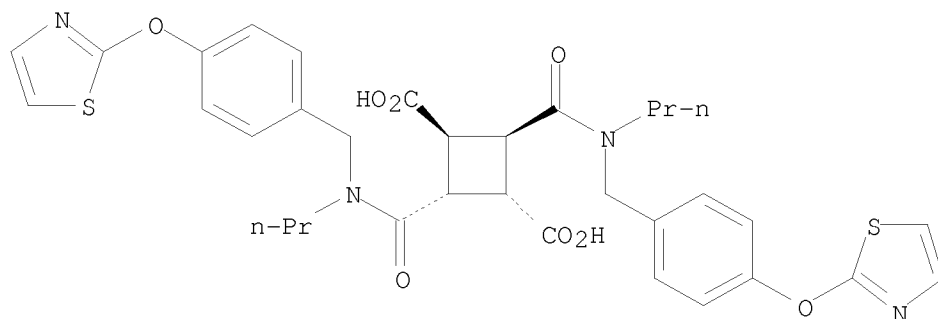
Relative stereochemistry.



RN 191284-57-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[propyl[[4-(2-thiazolyloxy)phenyl]methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

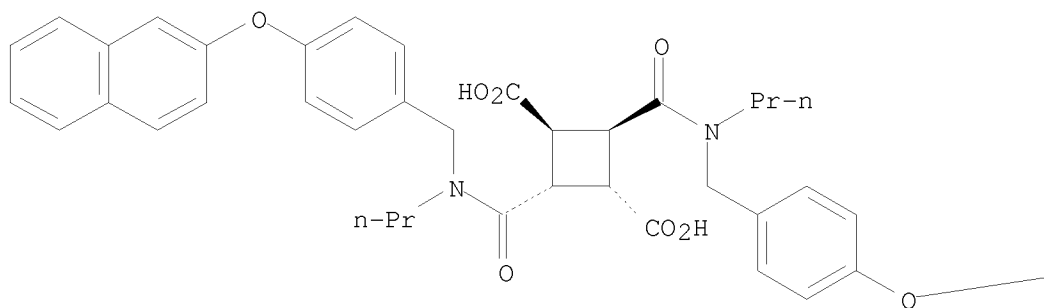


RN 191284-59-0 CAPLUS

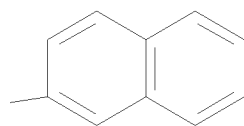
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(2-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

PAGE 1-A



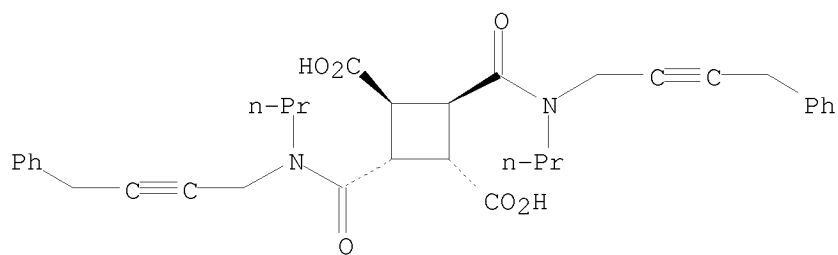
PAGE 1-B



RN 191284-61-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[4-phenyl-2-butyn-1-yl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

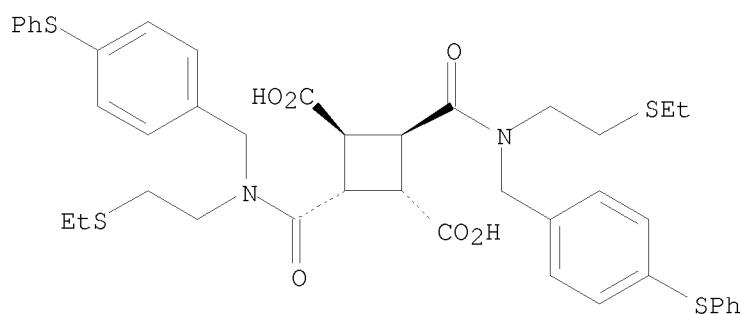
Relative stereochemistry.



RN 191284-63-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(ethylthio)ethyl][[4-(phenylthio)phenyl]methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

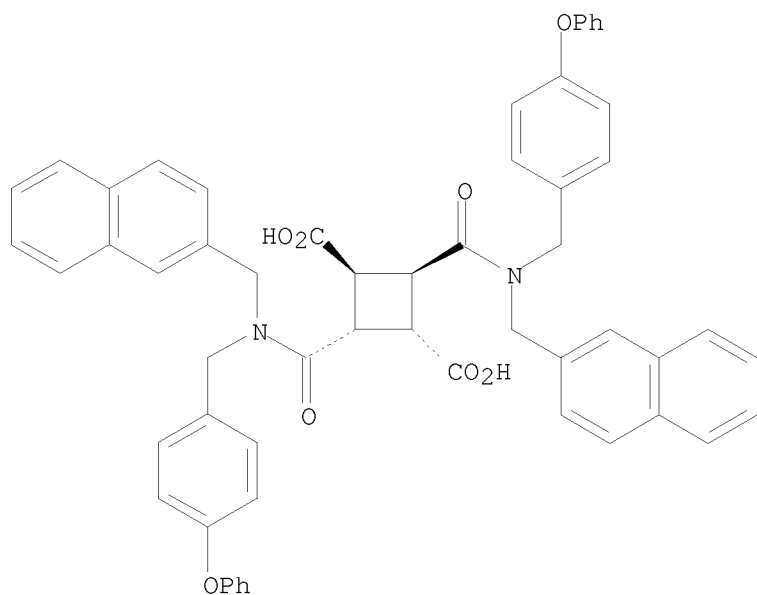
Relative stereochemistry.



RN 191284-65-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(naphthalenylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



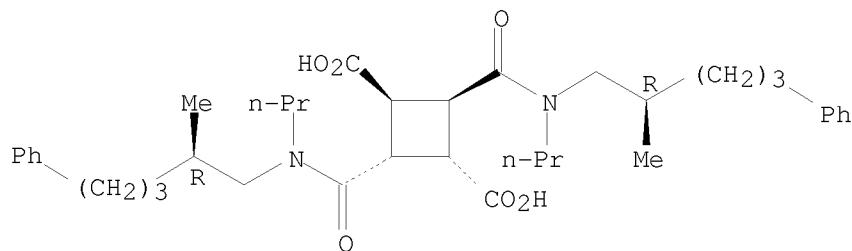
RN 191284-67-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-methyl-5-



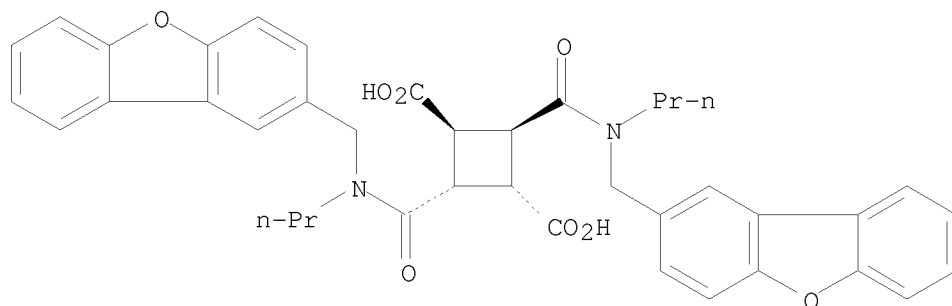
phenylpentyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )-  
(CA INDEX NAME)

Absolute stereochemistry.



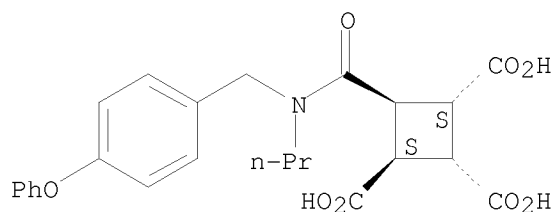
RN 191284-74-9 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-dibenzofuranylmethyl)propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



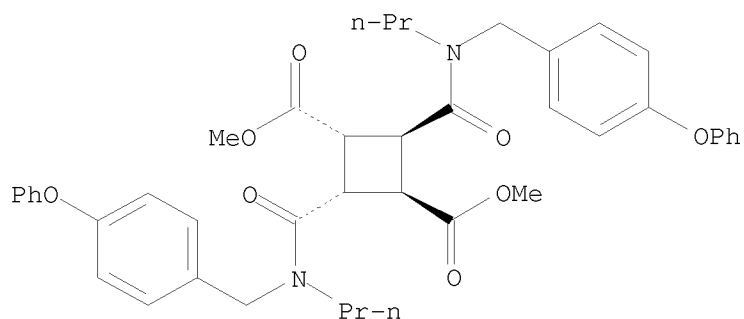
IT 169942-84-1P 171349-59-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of cyclobutanecarboxamide-derivative inhibitors of protein farnesyltransferase and squalene synthase)  
RN 169942-84-1 CAPLUS  
CN 1,2,3-Cyclobutanetricarboxylic acid, 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 171349-59-0 CAPLUS  
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, dimethyl ester, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

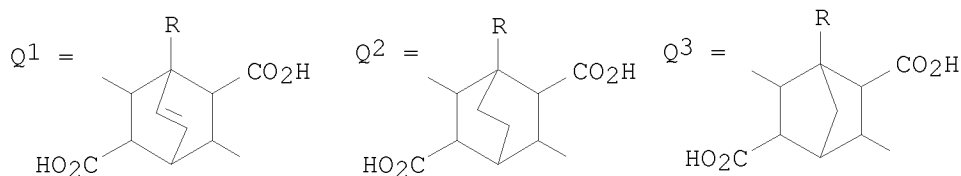
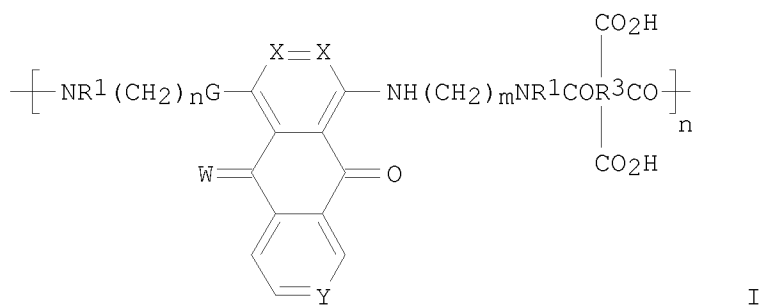
Relative stereochemistry.



L4 ANSWER 64 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1997:204346 CAPLUS  
 DOCUMENT NUMBER: 126:272349  
 ORIGINAL REFERENCE NO.: 126:52625a,52628a  
 TITLE: Anthracene nucleus-based polymeric antitumor agents and their preparation  
 INVENTOR(S): Tsou, Hwei-ru  
 PATENT ASSIGNEE(S): American Cyanamid Company, USA  
 SOURCE: U.S., 31 pp., Cont.-in-part of U.S.Ser. No. 332,661, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5609867	A	19970311	US 1995-521505	19950829
EP 710689	A2	19960508	EP 1995-307637	19951026
EP 710689	A3	19961120		
EP 710689	B1	20030502		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
AT 239047	T	20030515	AT 1995-307637	19951026
PT 710689	T	20030829	PT 1995-307637	19951026
ES 2197183	T3	20040101	ES 1995-307637	19951026
CA 2161603	A1	19960502	CA 1995-2161603	19951027
AU 9534547	A	19960509	AU 1995-34547	19951030
AU 690740	B2	19980430		
TW 383318	B	20000301	TW 1995-84111461	19951030
JP 08253420	A	19961001	JP 1995-283138	19951031
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			US 1995-521505	A 19950829

GI

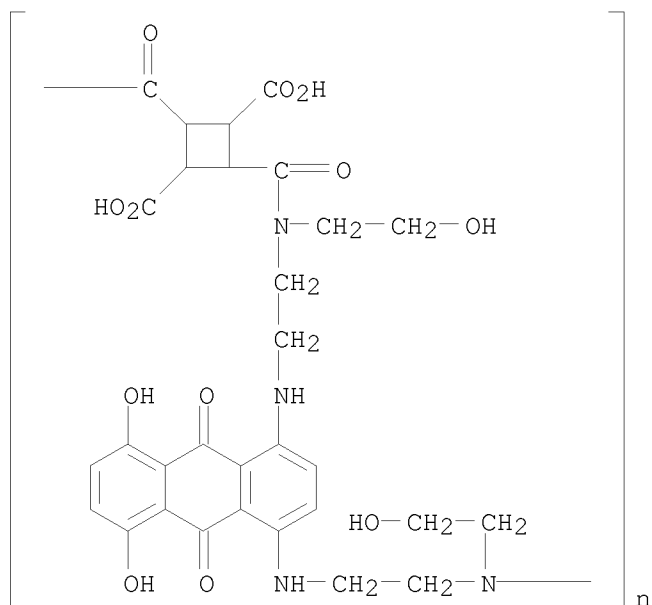


AB Antitumor agents I [X, Y = CH, N (when Y = N, X = CH); dotted line = optional double bond; W = O, N (when W = O, G = NH; when W = N, G = N and dotted line = bond); R1 = H, (CH2)nOH, (un)branched C1-4 alkyl, C3-7 carbocyclic ring; R2 = H, OR, halo, NRR'; R, R' = H, (un)branched C1-4 alkyl; m, n = 2, 3; n = 1-250; -R3(CO2H)2- = Q1, Q2, Q3], and pharmaceutically acceptable salts thereof, are disclosed which have activity as anticancer agents and inhibit leukemia and solid tumor growth in a mammal. Examples of compds. for use as starting materials in the invention are those having the anthracene nucleus, e.g. mitoxantrone. Preparation of e.g. Poly[((2-hydroxyethyl)imino)carbonyl(3,6-dicarboxybicyclo[2.2.2]octa-7-ene-2,5-diyl)carbonyl((2-hydroxyethyl)imino)-1,2-ethanediylimino(9,10-dihydro-5,8-dihydroxy-9,10-dioxo-1,4-anthracenediyl)imino-1,2-ethanediyl disodium salt] is described. Activity of polymeric mitoxantrone derivs. against P388 leukemia cells, breast carcinoma cells, ovarian adenocarcinoma cells, and colon carcinoma cells is presented.

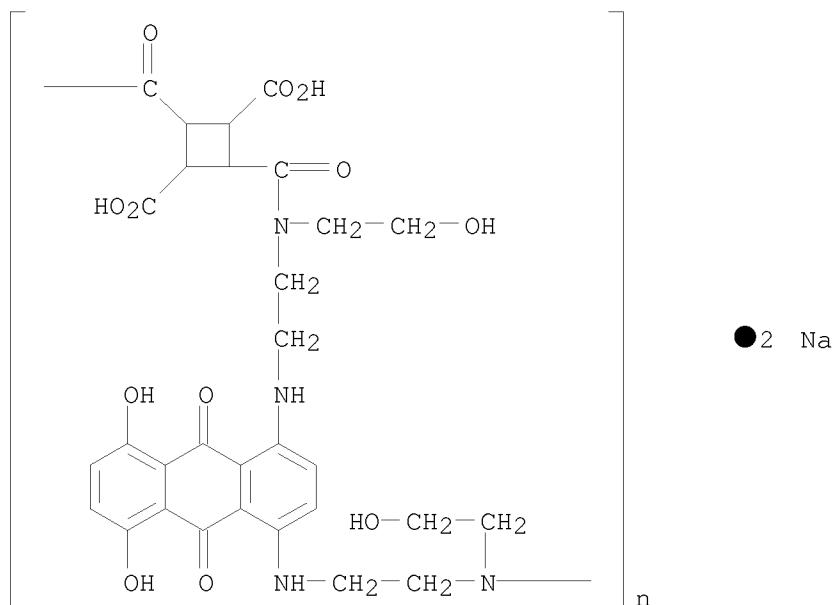
IT 188907-23-5P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (anthracene nucleus-based polymeric antitumor agents and preparation)

RN 188907-23-5 CAPLUS

CN Poly[[(2-hydroxyethyl)imino]-1,2-ethanediylimino(9,10-dihydro-5,8-dihydroxy-9,10-dioxo-1,4-anthracenediyl)imino-1,2-ethanediyl[(2-hydroxyethyl)imino]carbonyl(2,4-dicarboxy-1,3-cyclobutanediyl)carbonyl]  
 (9CI) (CA INDEX NAME)



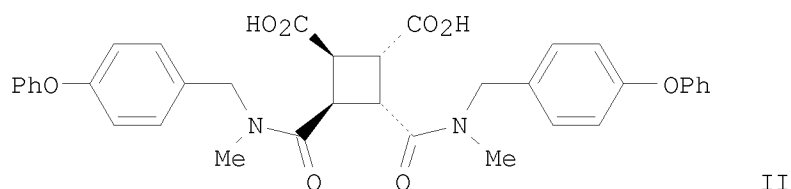
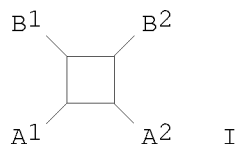
IT 188907-21-3  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (anthracene nucleus-based polymeric antitumor agents and preparation)  
 RN 188907-21-3 CAPLUS  
 CN Poly[[ (2-hydroxyethyl)imino]-1,2-ethanediylimino(9,10-dihydro-5,8-dihydroxy-9,10-dioxo-1,4-anthracenediyl)imino-1,2-ethanediyl[(2-hydroxyethyl)imino]carbonyl(2,4-dicarboxy-1,3-cyclobutanediyl)carbonyl], disodium salt (9CI) (CA INDEX NAME)



L4 ANSWER 65 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1997:48721 CAPLUS  
 DOCUMENT NUMBER: 126:59736  
 ORIGINAL REFERENCE NO.: 126:11729a,11732a

TITLE: Preparation of  
 (4-phenoxybenzyl)aminocarbonyl-substituted cyclobutane  
 derivatives as inhibitors of protein  
 farnesyltransferase  
 INVENTOR(S): Arendsen, David L.; Rosenberg, Saul H.; Rockway, Todd  
 W.; Stein, Herman H.; Fung, Anthony K. L.  
 PATENT ASSIGNEE(S): Abbott Laboratories, USA  
 SOURCE: PCT Int. Appl., 309 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9634850	A1	19961107	WO 1996-US6156	19960502
W: AU, CA, JP, KR, MX				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9657227	A	19961121	AU 1996-57227	19960502
PRIORITY APPLN. INFO.:			US 1995-433718	A 19950503
			US 1995-564836	A 19951129
			US 1996-633205	A 19960426
			WO 1996-US6156	W 19960502
OTHER SOURCE(S):		MARPAT 126:59736		
GI				



AB The title compds. [I; A1, A2 = XC(O)G, XC(S)G (wherein X = a bond, CH<sub>2</sub>, O, etc.; G = mono- or disubstituted NH<sub>2</sub>, substituted OH, SH); B1, B2 = CH<sub>2</sub>OH, CH<sub>2</sub>CH<sub>2</sub>OH, CHO, etc.], useful for inhibiting squalene synthetase and cholesterol biosynthesis, and treating hyperlipidemia, atherosclerosis and a fungal infection, were prepared Thus, reaction of 1,2,3,4-cyclobutanecarboxylic dianhydride with N-methyl-N-(4-phenoxybenzyl)amine in the presence of Et<sub>3</sub>N in DMF afforded 28% (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )-II which showed 54% inhibition of squalene synthetase in vitro at 10  $\mu$ M.  
 IT 169941-79-1P 169941-80-4P 169941-81-5P  
 169941-82-6P 169941-83-7P 169941-84-8P  
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 169941-89-3P 169941-90-6P 169941-91-7P  
 169941-92-8P 169941-93-9P 169941-94-0P  
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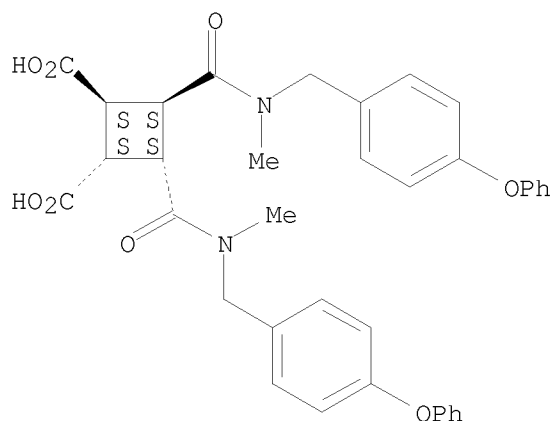
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RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of N-(4-phenoxybenzyl)aminocarbonyl-substituted cyclobutane derivs. as inhibitors of protein farnesyltransferase)

RN 169941-79-1 CAPLUS

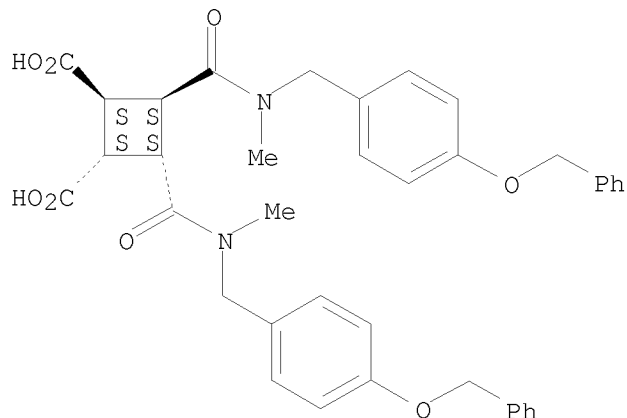
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



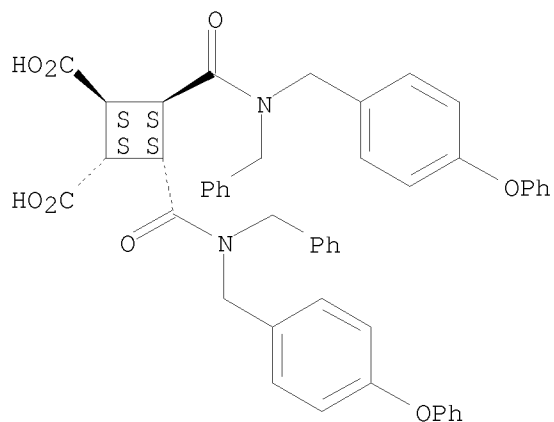
RN 169941-80-4 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[[4-(phenylmethoxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



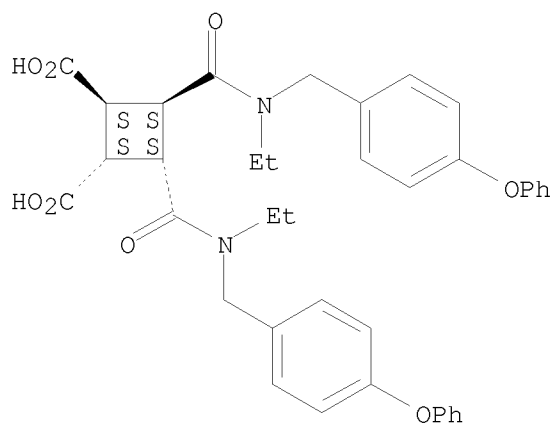
RN 169941-81-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169941-82-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ethyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

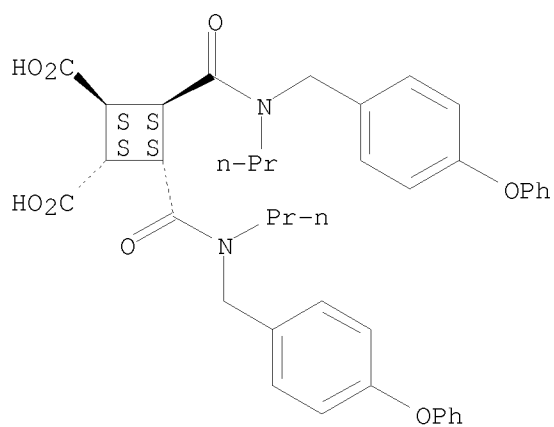
Relative stereochemistry.



RN 169941-83-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

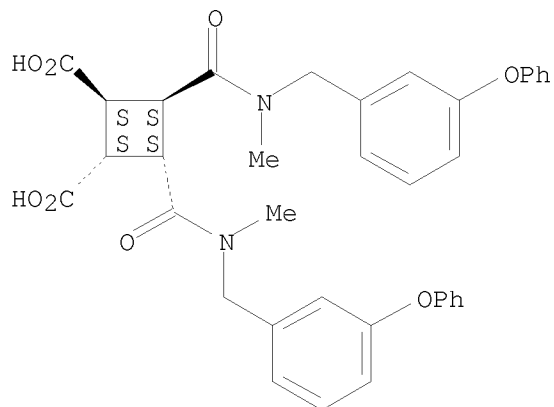
Relative stereochemistry.



RN 169941-84-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(3-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

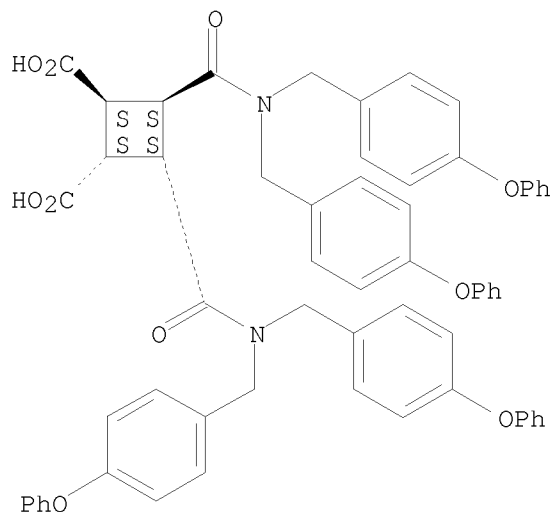




RN 169941-85-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

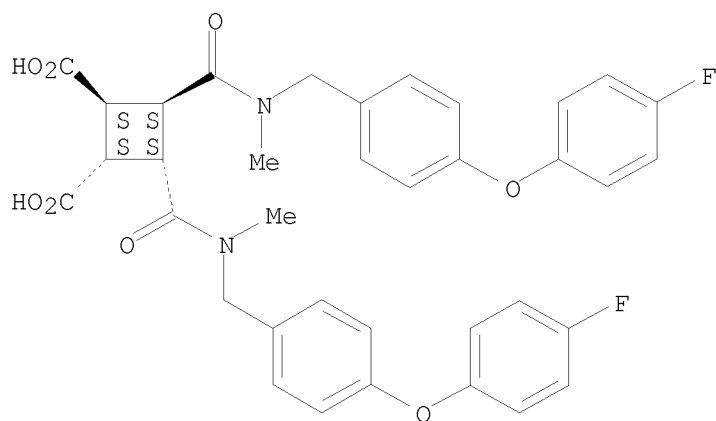
Relative stereochemistry.



RN 169941-86-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

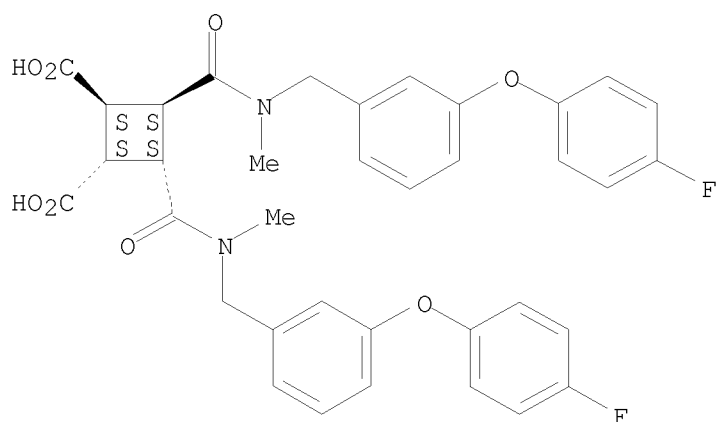
Relative stereochemistry.



RN 169941-87-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[3-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

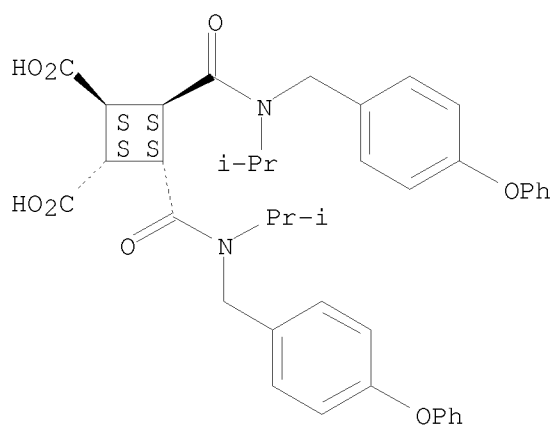
Relative stereochemistry.



RN 169941-89-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(1-methylethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

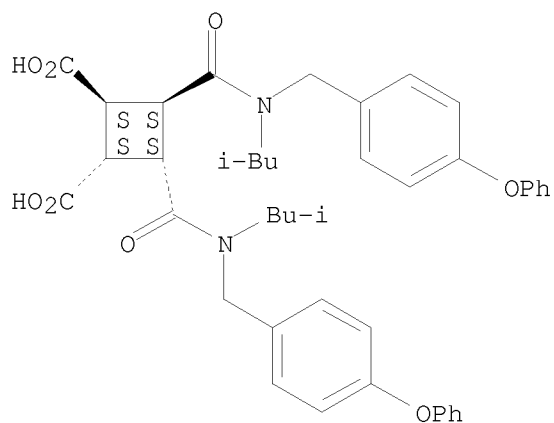
Relative stereochemistry.



RN 169941-90-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-methylpropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

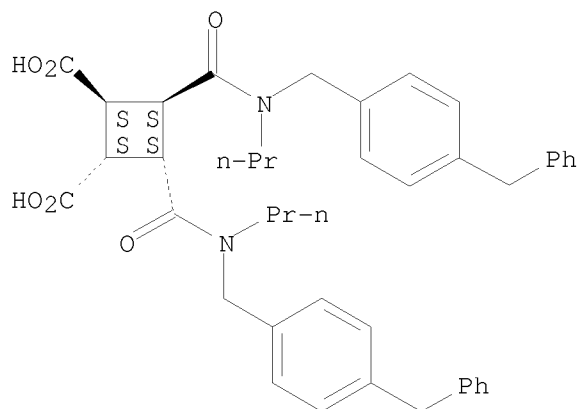
Relative stereochemistry.



RN 169941-91-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylmethyl)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

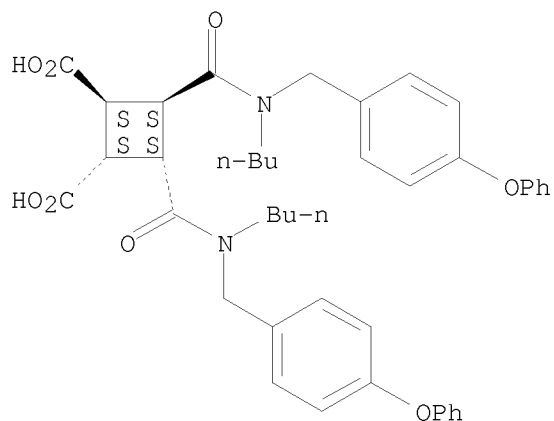
Relative stereochemistry.



RN 169941-92-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

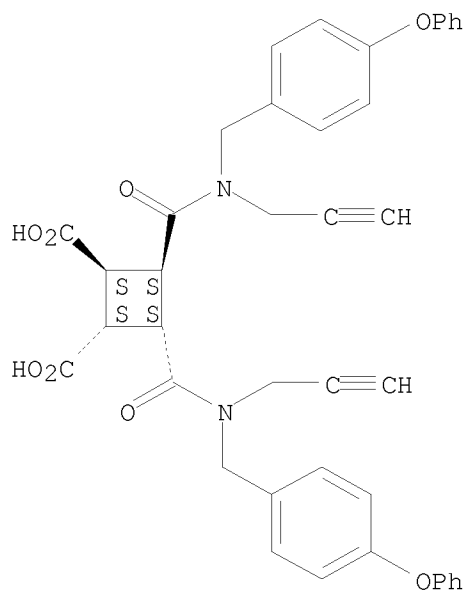
Relative stereochemistry.



RN 169941-93-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]-2-propyn-1-ylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

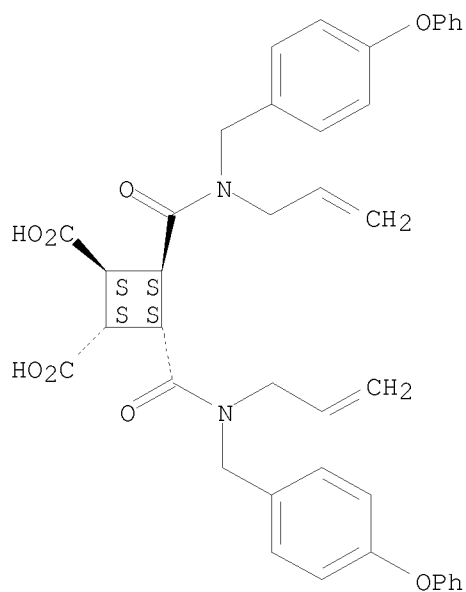
Relative stereochemistry.



RN 169941-94-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]-2-propen-1-ylamino]carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

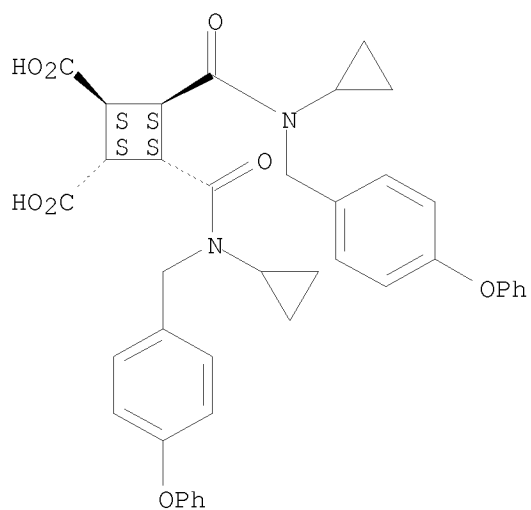
Relative stereochemistry.



RN 169941-95-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopropyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

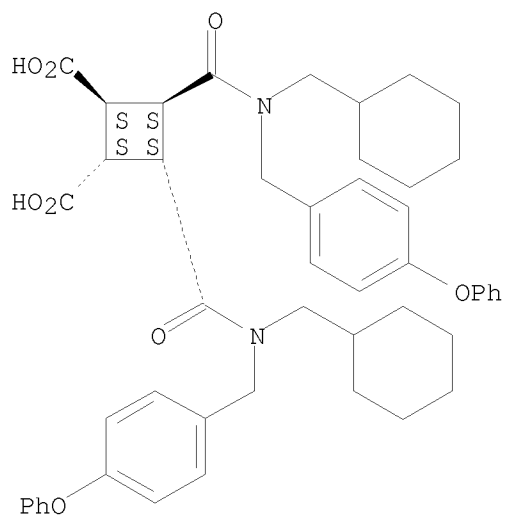
Relative stereochemistry.



RN 169941-96-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclohexylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

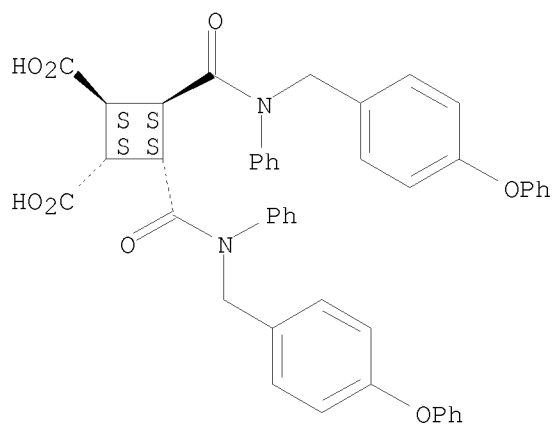
Relative stereochemistry.



RN 169941-97-3 CAPLUS

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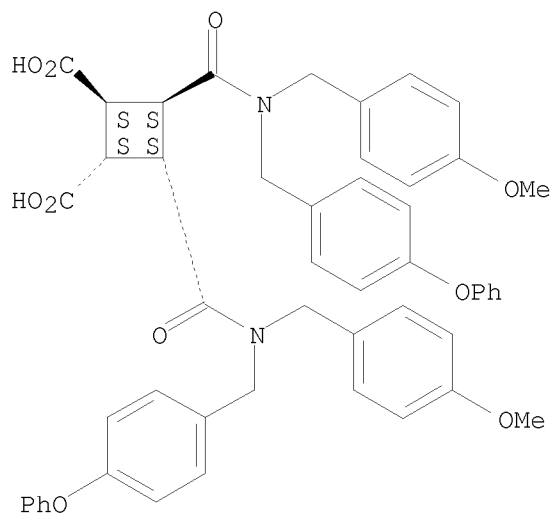
Relative stereochemistry.



RN 169941-98-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-methoxyphenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

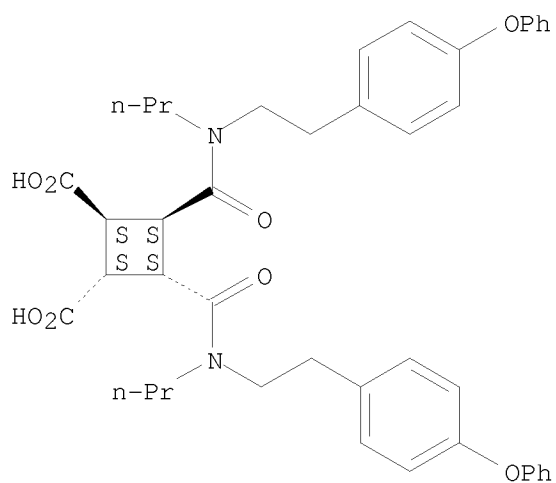
Relative stereochemistry.



RN 169942-01-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

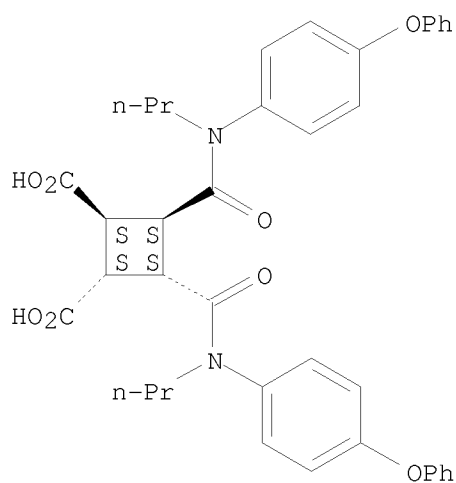
Relative stereochemistry.



RN 169942-02-3 CAPLUS

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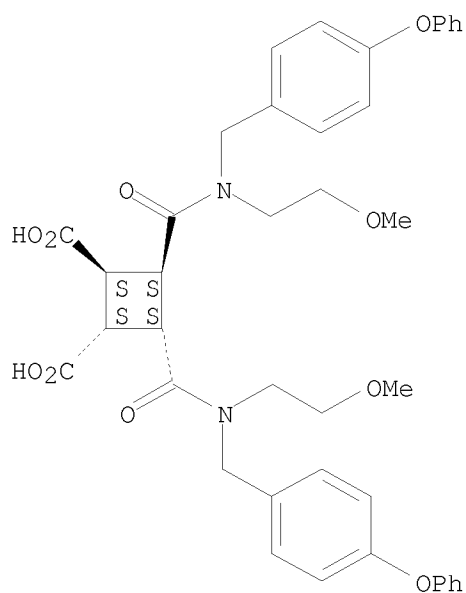
Relative stereochemistry.



RN 169942-03-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[2-methoxyethyl][(4-phenoxyphenyl)methyl]amino]carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

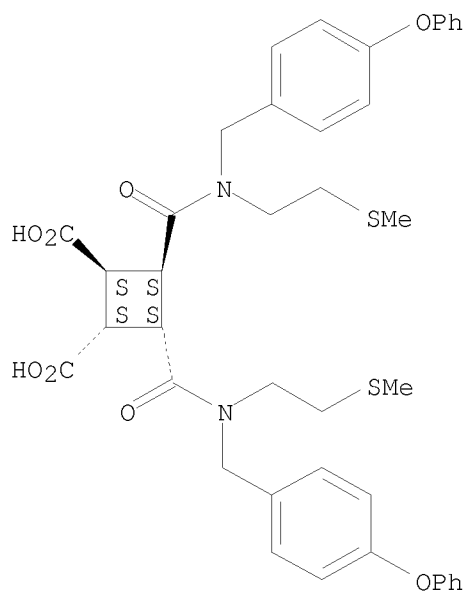
Relative stereochemistry.



RN 169942-04-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(methylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

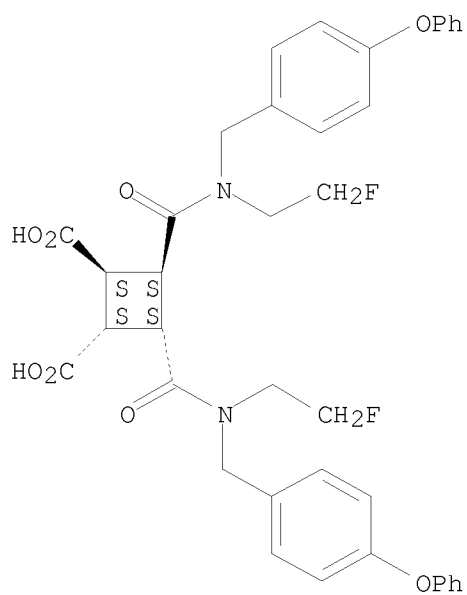


RN 169942-05-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(fluoroethyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

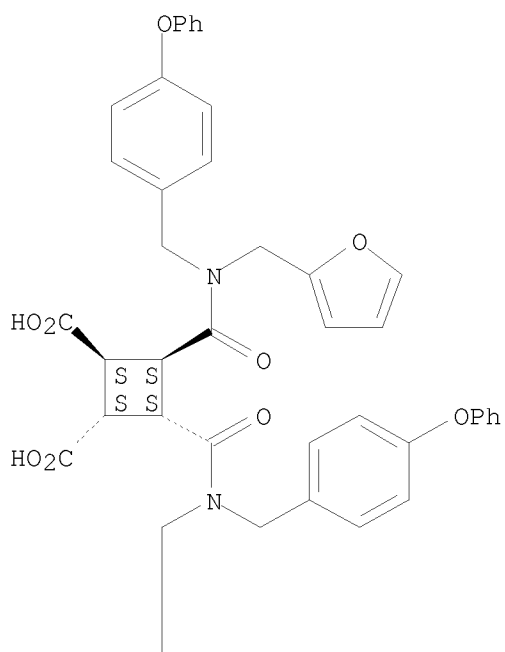


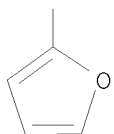


RN 169942-06-7 CAPLUS  
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Relative stereochemistry.

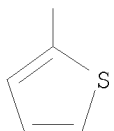
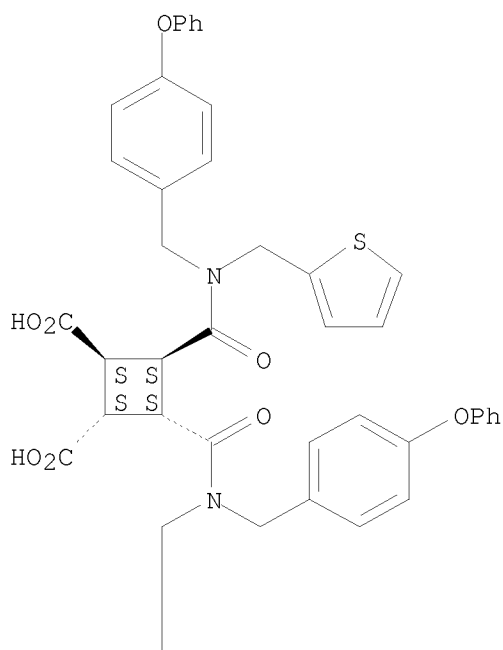
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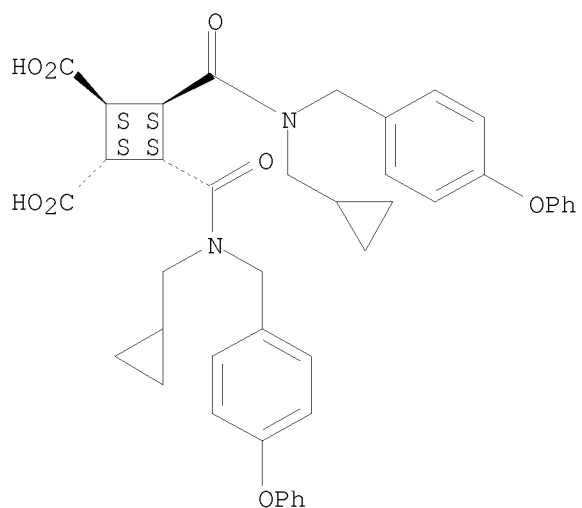
RN 169942-07-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-08-9 CAPLUS  
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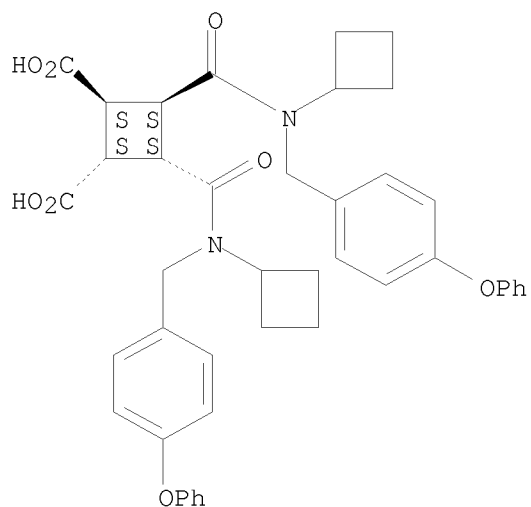
Relative stereochemistry.



RN 169942-09-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclobutyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

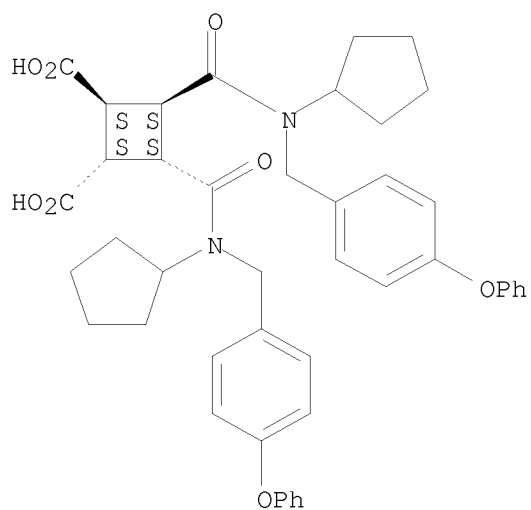
Relative stereochemistry.



RN 169942-10-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

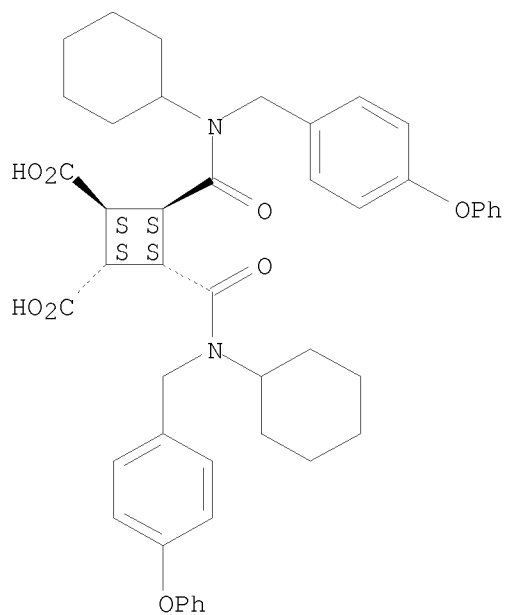
Relative stereochemistry.



RN 169942-11-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclohexyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

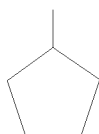
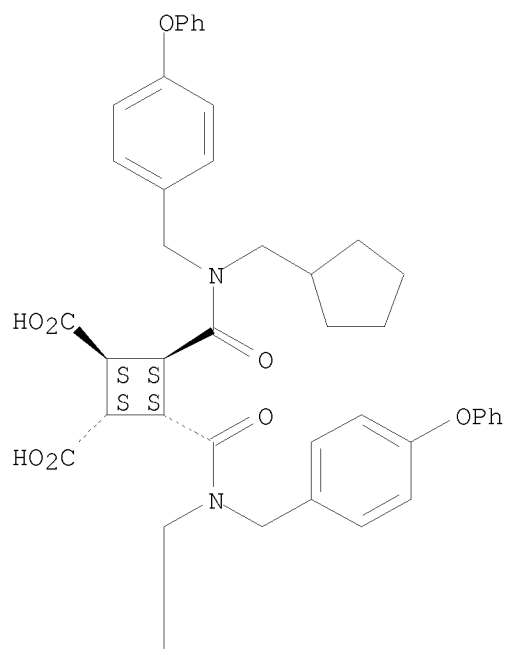
Relative stereochemistry.



RN 169942-12-5 CAPLUS

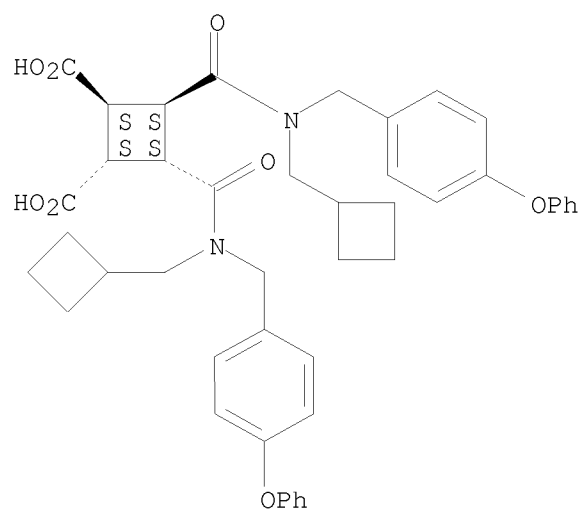
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopentylmethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN	169942-13-6	CAPLUS
CN	1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclobutylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)	

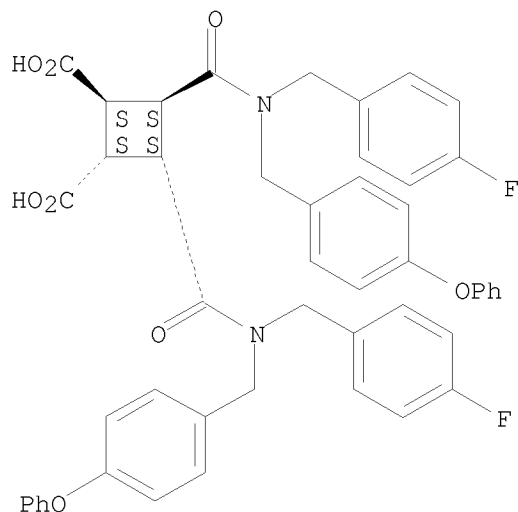
Relative stereochemistry.



RN 169942-14-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-fluorophenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

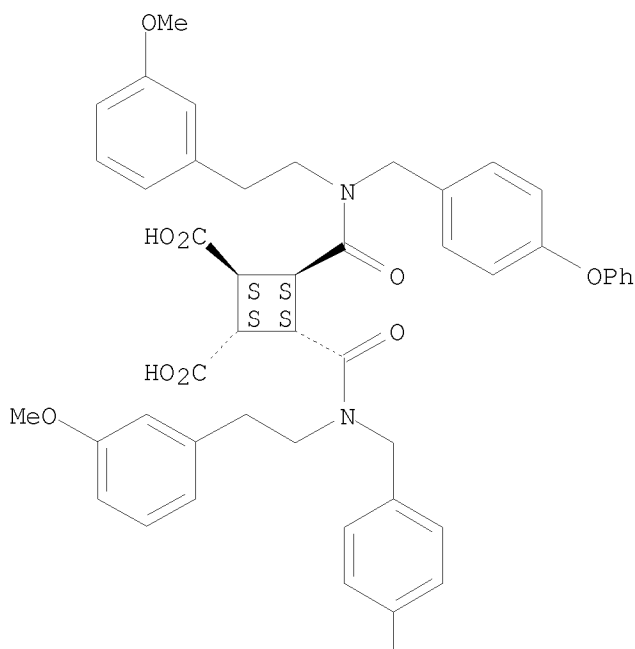


RN 169942-15-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(3-methoxyphenyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

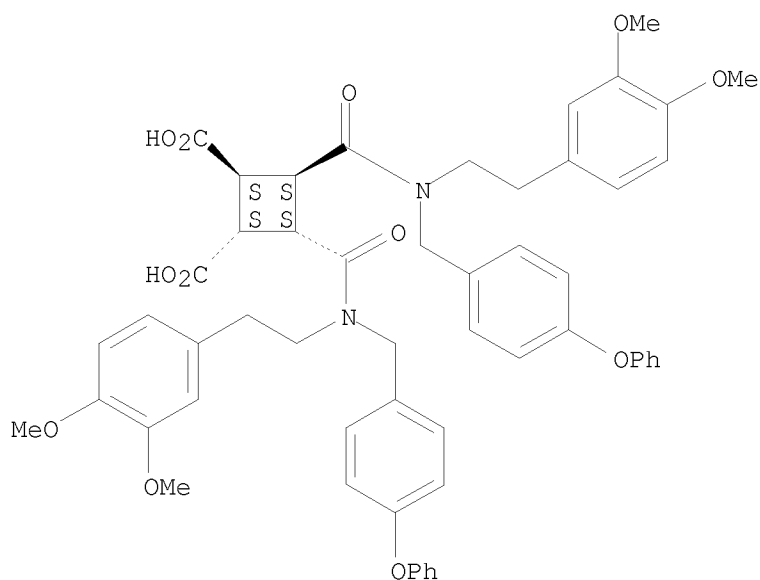
PAGE 1-A





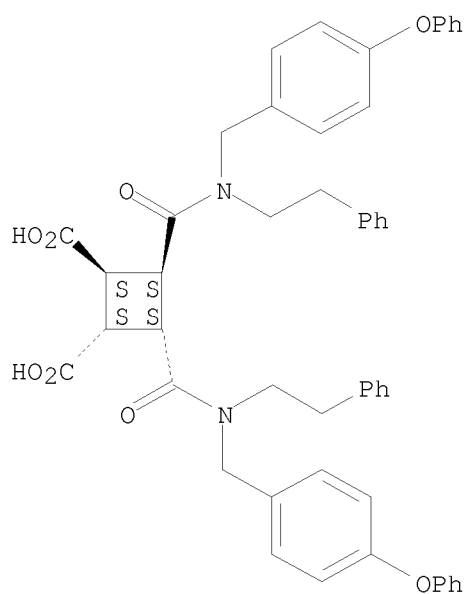
RN 169942-16-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(3,4-dimethoxyphenyl)ethyl][ (4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-17-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl] (2-phenylethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

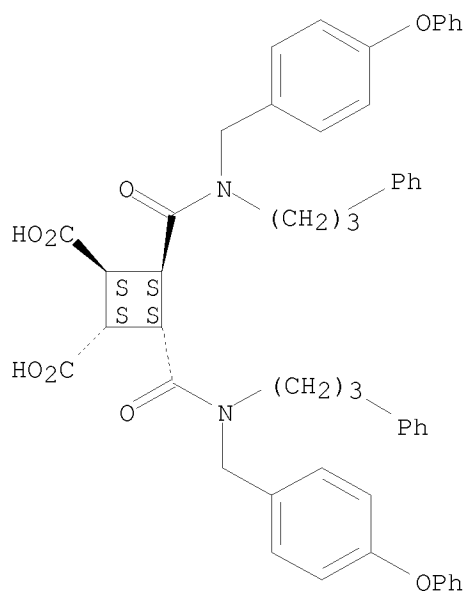
Relative stereochemistry.



RN 169942-18-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](3-phenylpropyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

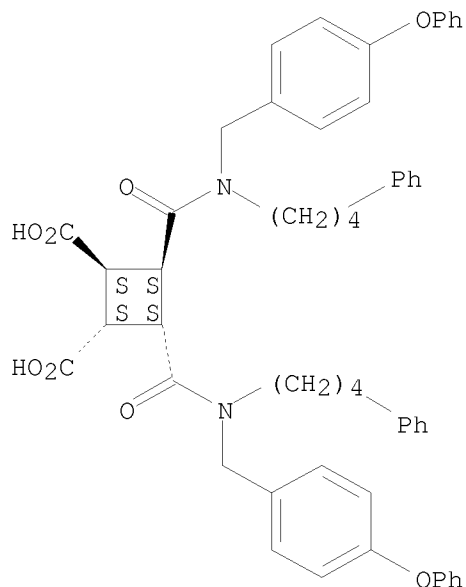
Relative stereochemistry.



RN 169942-19-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](4-phenylbutyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

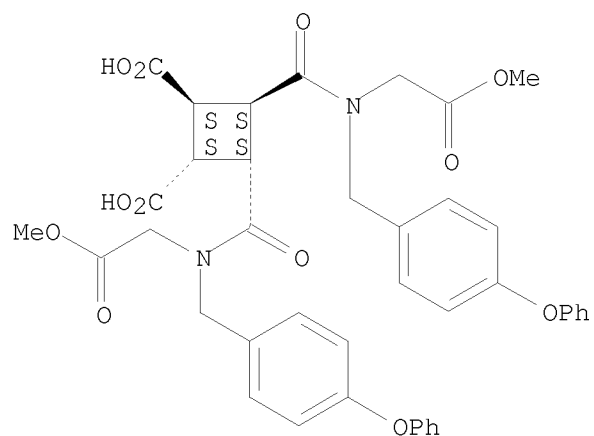


RN 169942-20-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(2-methoxy-2-oxoethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

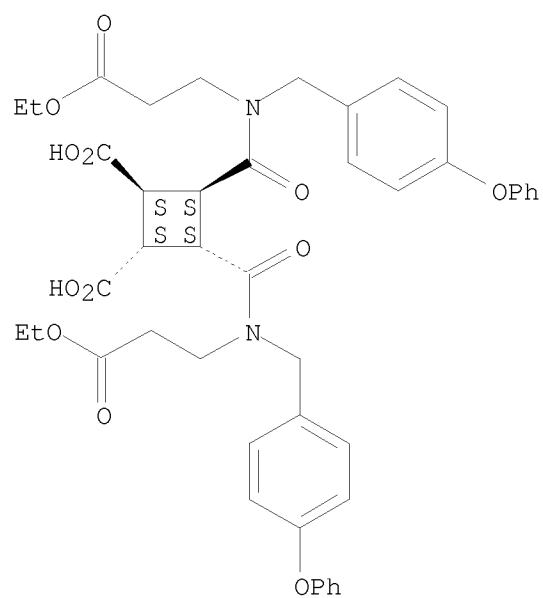
Relative stereochemistry.





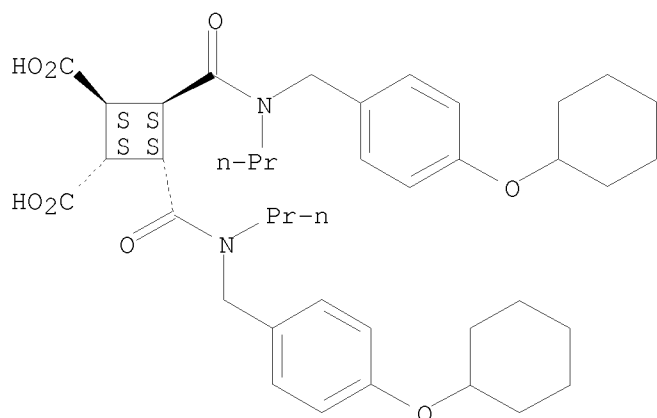
RN 169942-21-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(3-ethoxy-3-oxopropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-22-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-(cyclohexyloxy)phenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

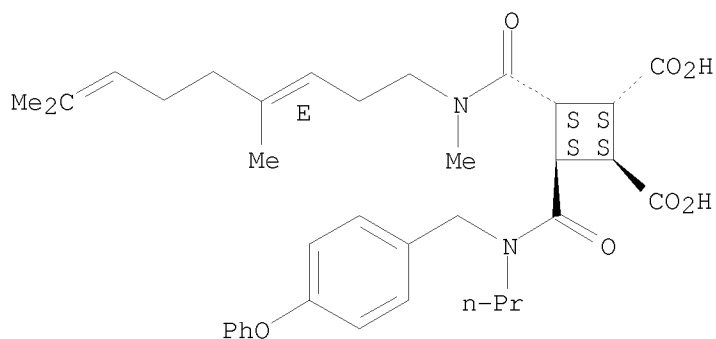
Relative stereochemistry.



RN 169942-23-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(3E)-4,8-dimethyl-3,7-nonadien-1-yl]methylamino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

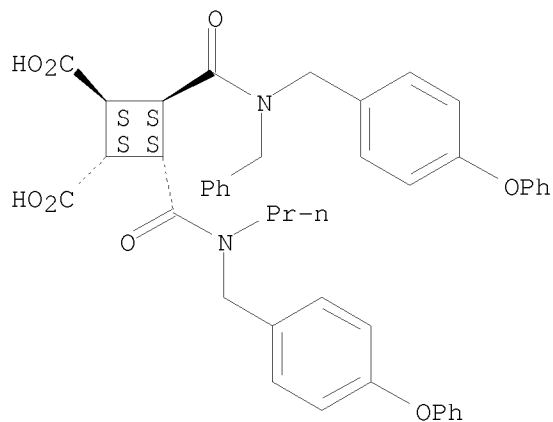
Relative stereochemistry.  
Double bond geometry as shown.



RN 169942-24-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

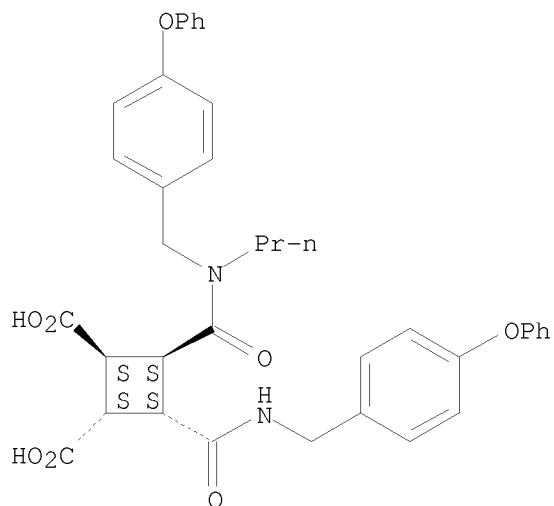
Relative stereochemistry.



RN 169942-25-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(4-phenoxyphenyl)methyl]amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

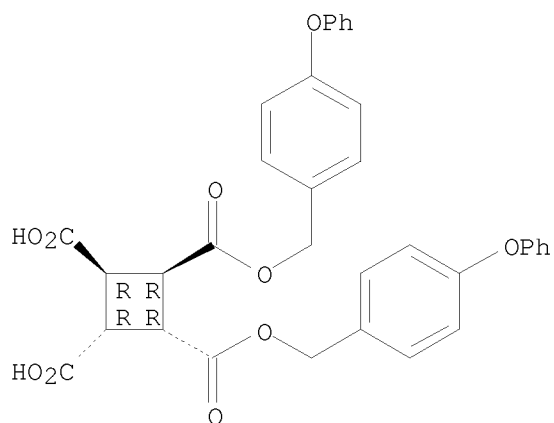
Relative stereochemistry.



RN 169942-26-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis[(4-phenoxyphenyl)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

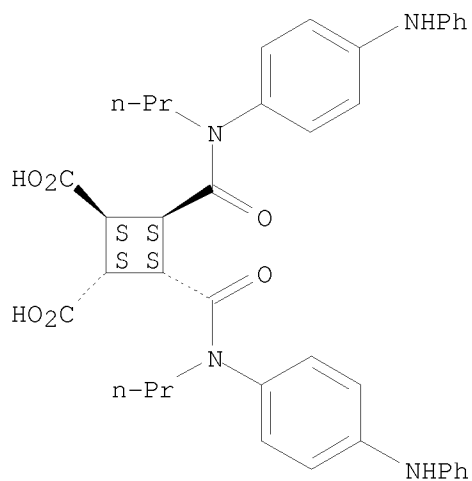
Relative stereochemistry.



RN 169942-27-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

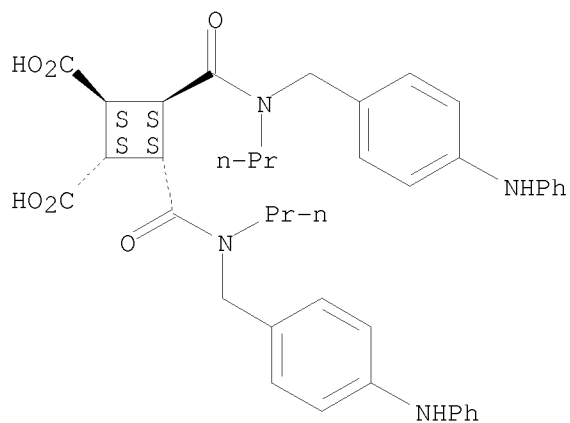
Relative stereochemistry.



RN 169942-28-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylamino)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

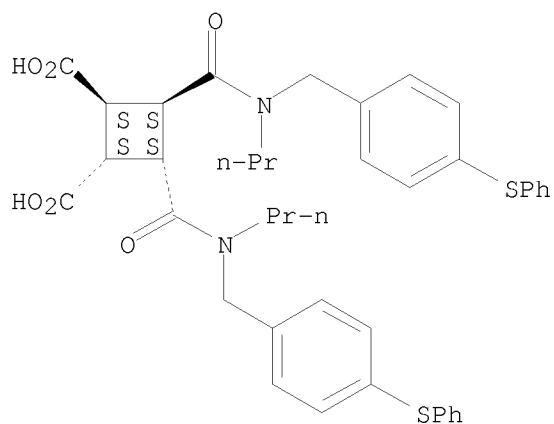
Relative stereochemistry.



RN 169942-29-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylthio)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

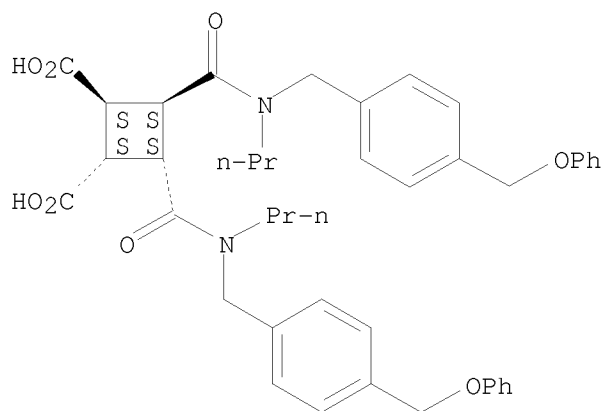
Relative stereochemistry.



RN 169942-30-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenoxy)methyl]phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

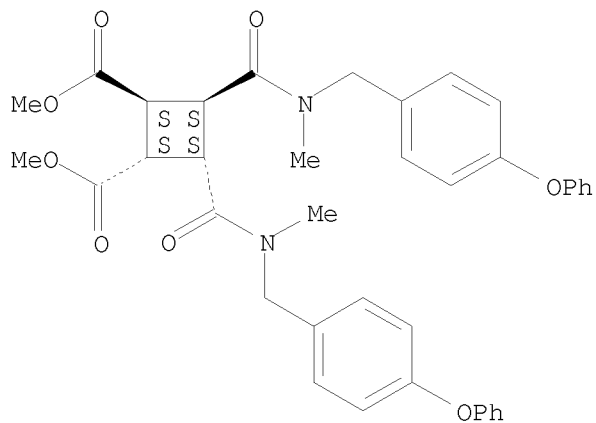
Relative stereochemistry.



RN 169942-41-0 CAPLUS

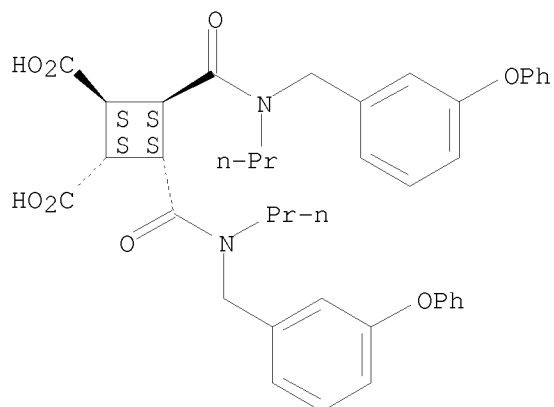
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, dimethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



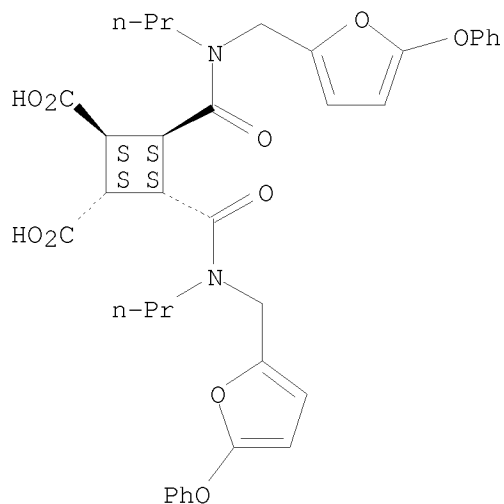
RN 169942-42-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(3-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



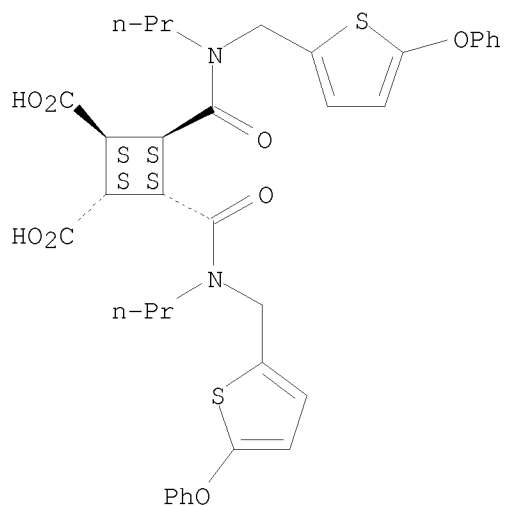
RN 169942-43-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(5-phenoxy-2-furanyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-44-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(5-phenoxy-2-thienyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

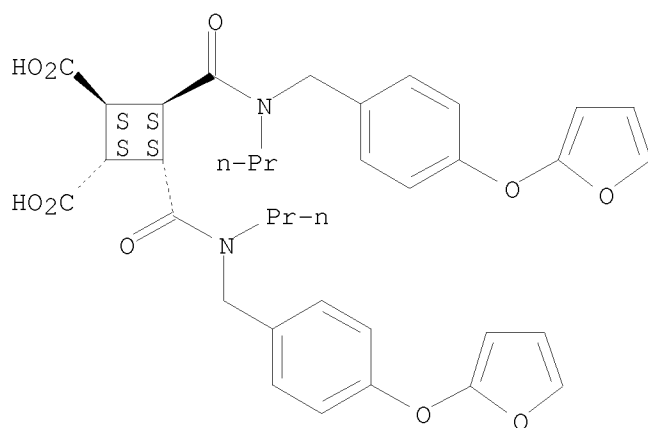
Relative stereochemistry.



RN 169942-45-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(2-furanyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

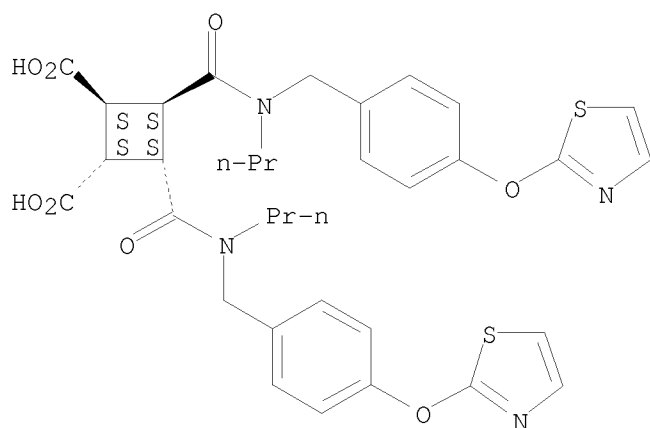
Relative stereochemistry.



RN 169942-46-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[propyl[[4-(2-thiazolyloxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

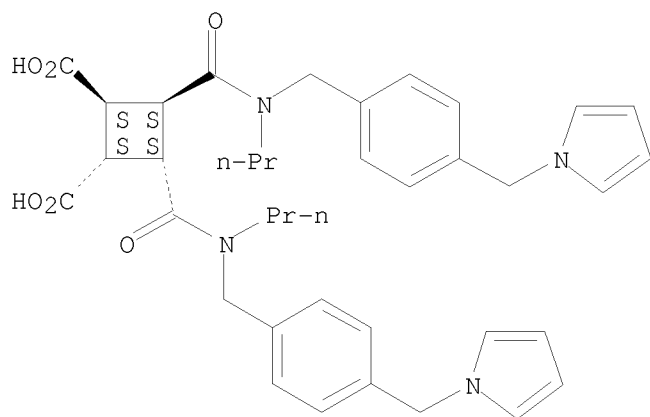
Relative stereochemistry.



RN 169942-47-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[propyl[[4-(1H-pyrrol-1-yl)methyl]phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

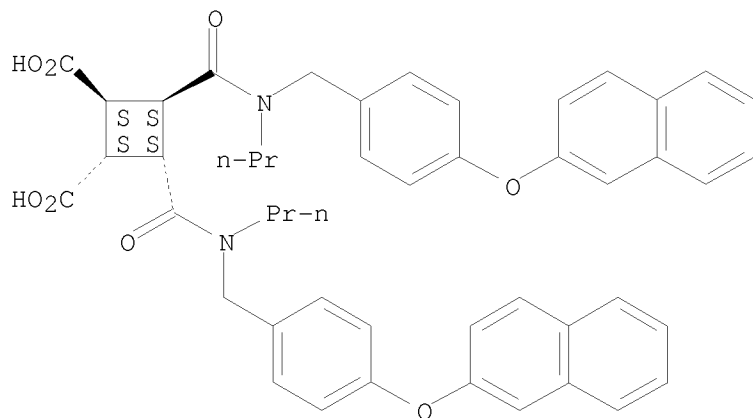
Relative stereochemistry.



RN 169942-49-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(2-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

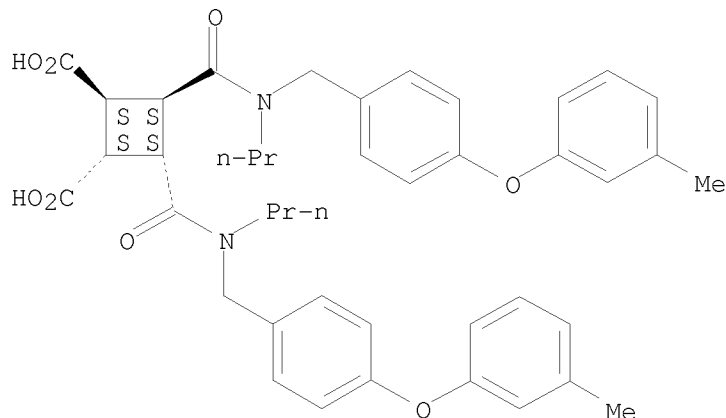




RN 169942-50-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(3-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-  
(CA INDEX NAME)

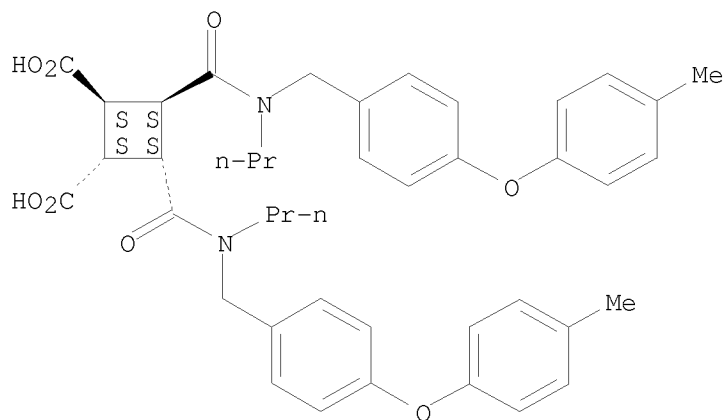
Relative stereochemistry.



RN 169942-51-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-  
(CA INDEX NAME)

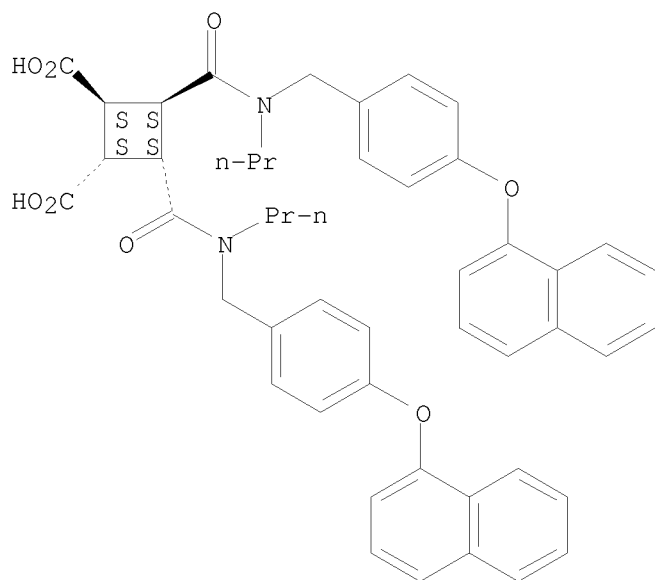
Relative stereochemistry.



RN 169942-52-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(1-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-  
(CA INDEX NAME)

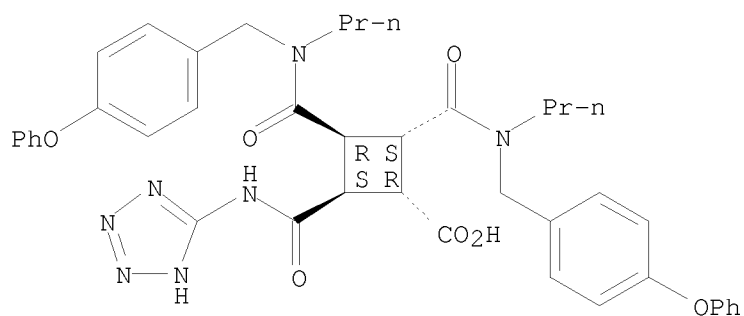
Relative stereochemistry.



RN 169942-53-4 CAPLUS

CN Cyclobutanecarboxylic acid, 2,3-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[(1H-tetrazol-5-ylamino)carbonyl]-, (1R,2S,3R,4S)-rel- (9CI) (CA INDEX NAME)

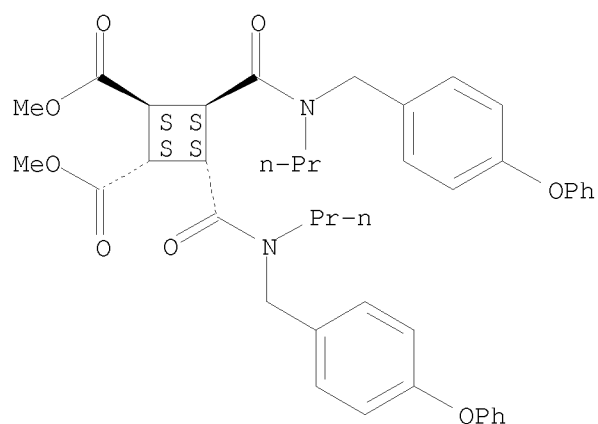
Relative stereochemistry.



RN 169942-55-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, dimethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

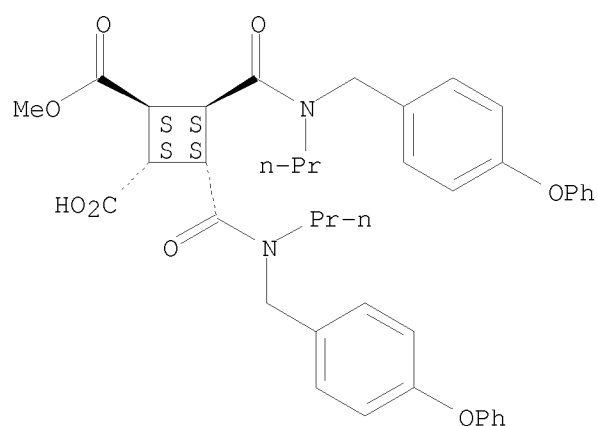
Relative stereochemistry.



RN 169942-56-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

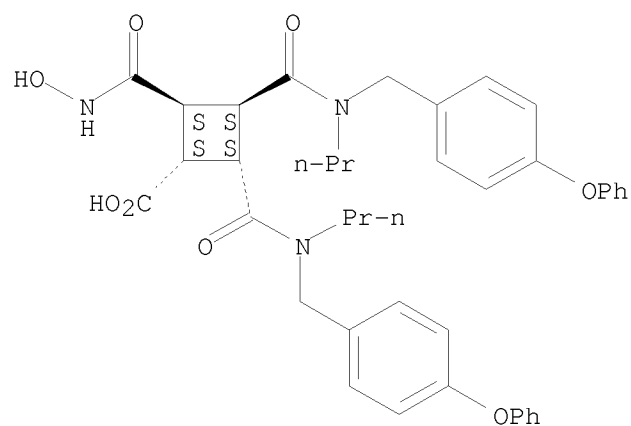
Relative stereochemistry.



RN 169942-57-8 CAPLUS

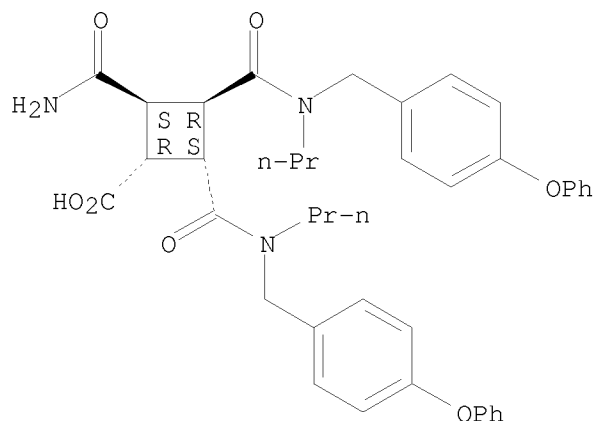
CN Cyclobutanecarboxylic acid, 2-[(hydroxyamino)carbonyl]-3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



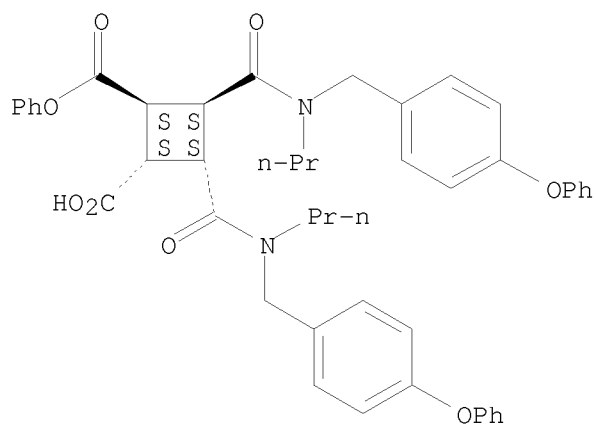
RN 169942-58-9 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-(aminocarbonyl)-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



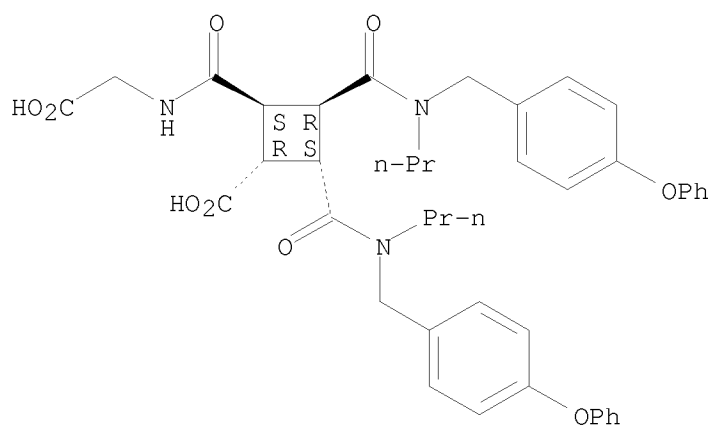
RN 169942-64-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monophenyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 169942-65-8 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[[[(carboxymethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

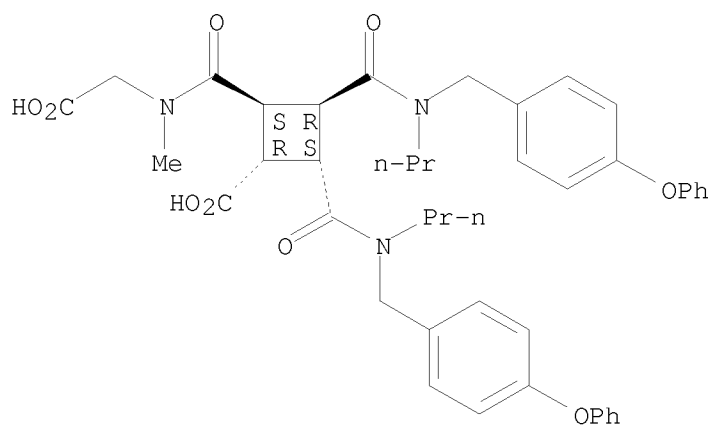
Relative stereochemistry.



RN 169942-67-0 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(carboxymethyl)methylamino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

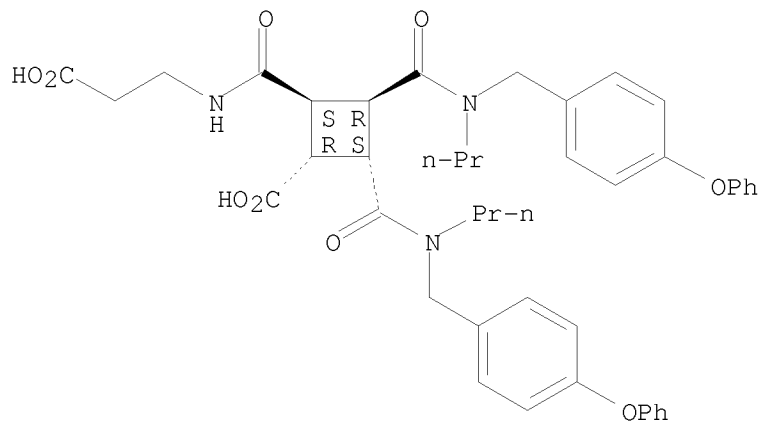
Relative stereochemistry.



RN 169942-70-5 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(2-carboxyethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

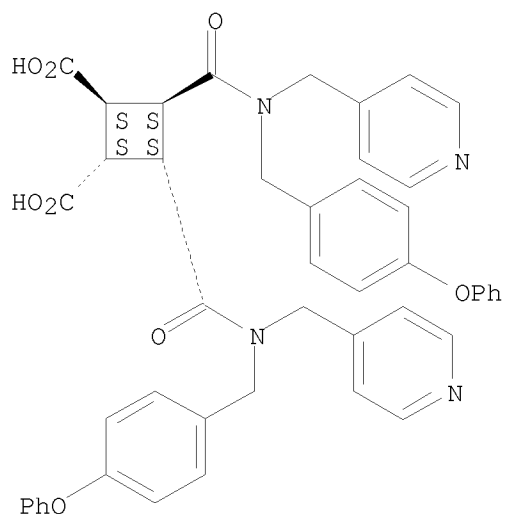
Relative stereochemistry.



RN 169942-71-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](4-pyridinylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

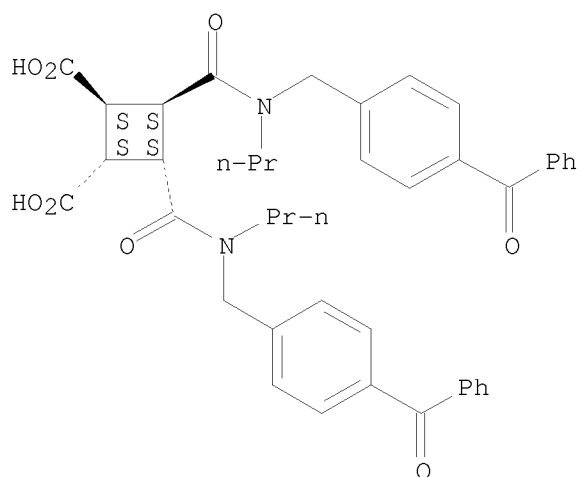
Relative stereochemistry.



RN 169942-72-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-benzoylphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

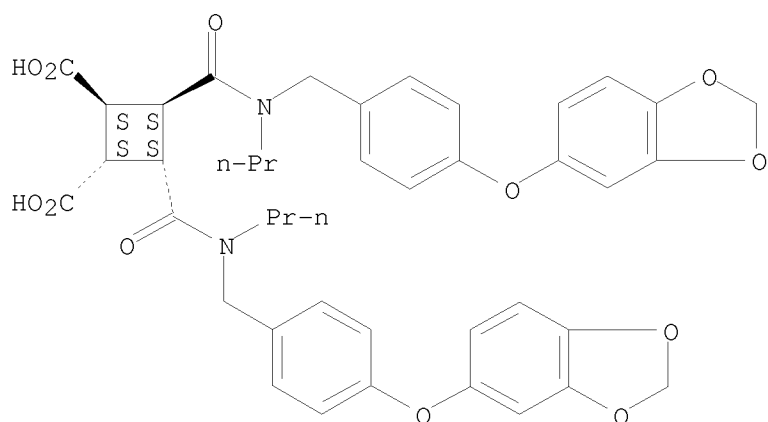
Relative stereochemistry.



RN 169942-73-8 CAPLUS

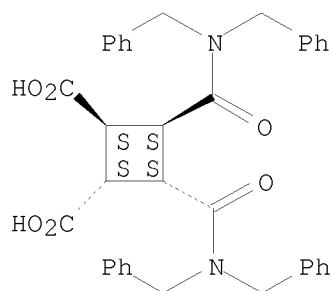
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(1,3-benzodioxol-5-yloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



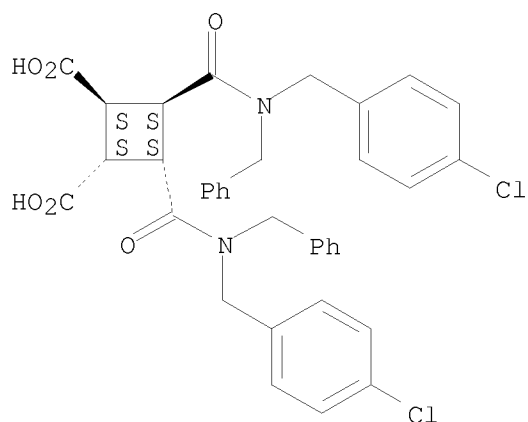
RN 169942-75-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis(phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



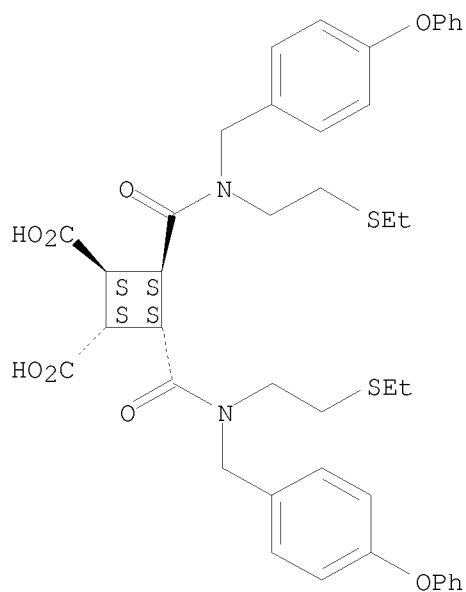
RN 169942-76-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-chlorophenyl)methyl](phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



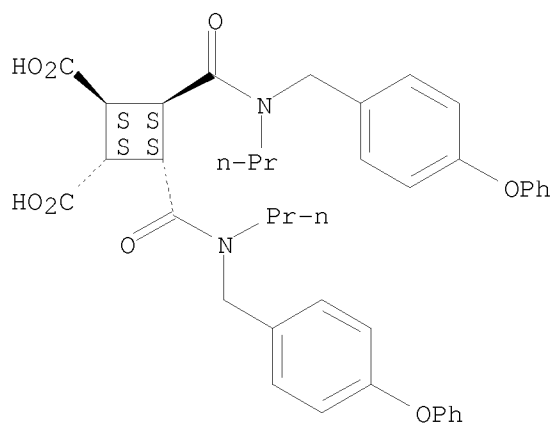
RN 169942-82-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(ethylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 170207-65-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-(-)- (9CI)  
 (CA INDEX NAME)

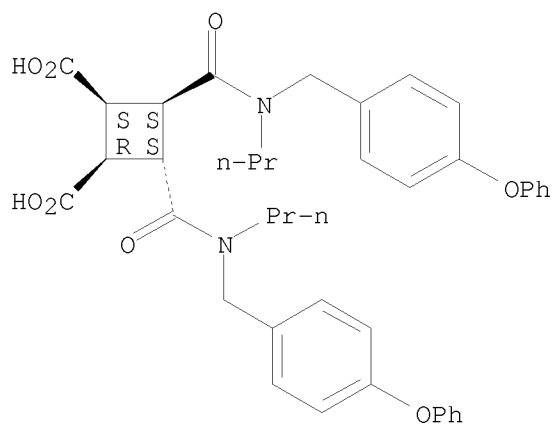
Rotation (-). Absolute stereochemistry unknown.



RN 170207-66-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4R)-rel- (9CI) (CA INDEX NAME)

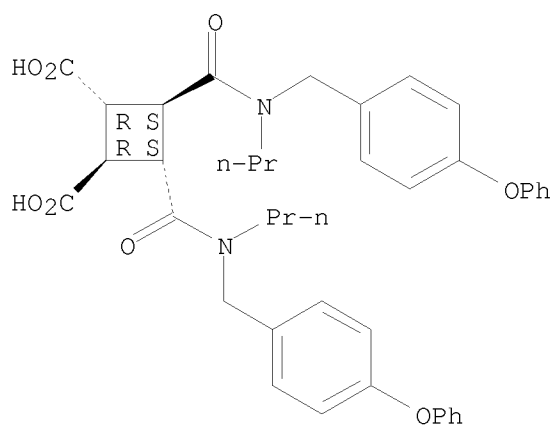
Relative stereochemistry.





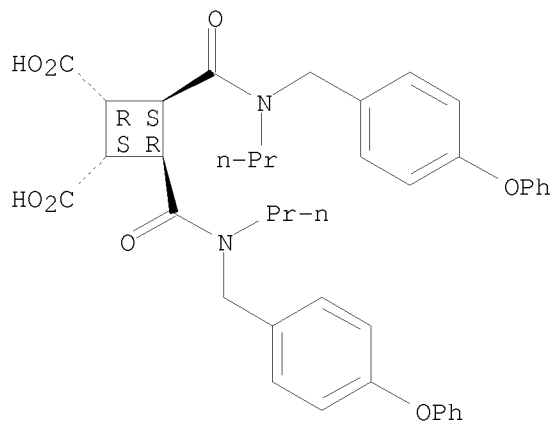
RN 170207-67-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3S,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



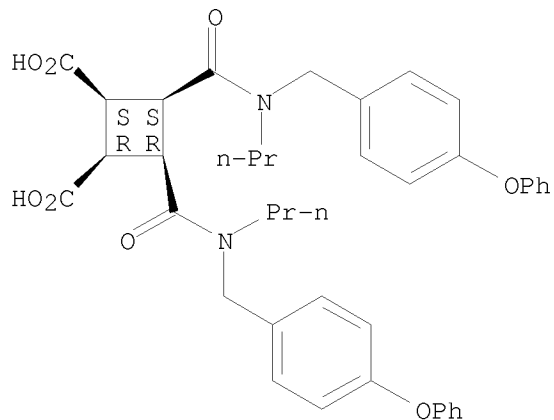
RN 170207-68-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



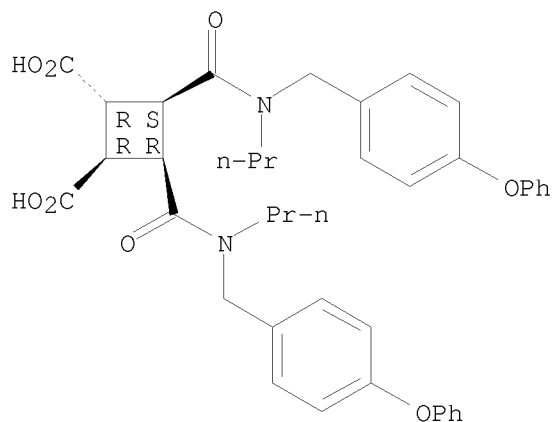
RN 170207-69-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3S,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



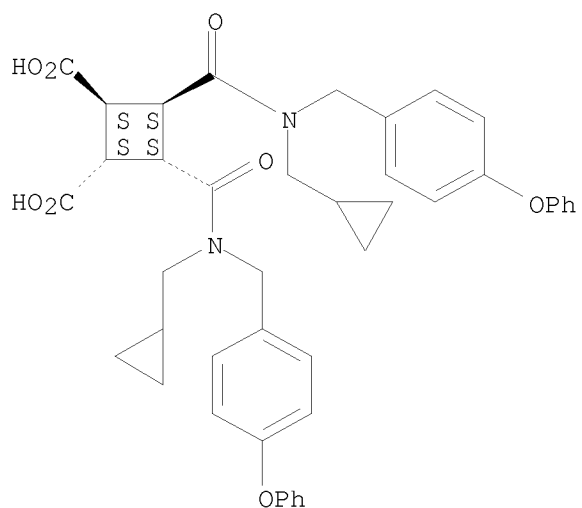
RN 170207-70-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 170207-71-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclopropylmethyl)][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel-(-)- (9CI) (CA INDEX NAME)

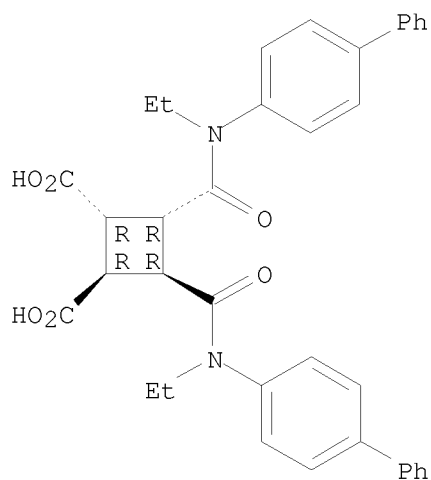
Rotation (-). Absolute stereochemistry unknown.



RN 185209-29-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[1,1'-biphenyl]-4-ylethylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

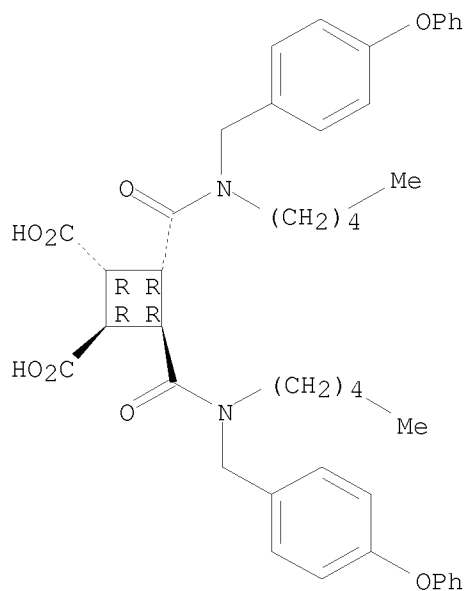
Relative stereochemistry.



RN 185209-30-7 CAPLUS

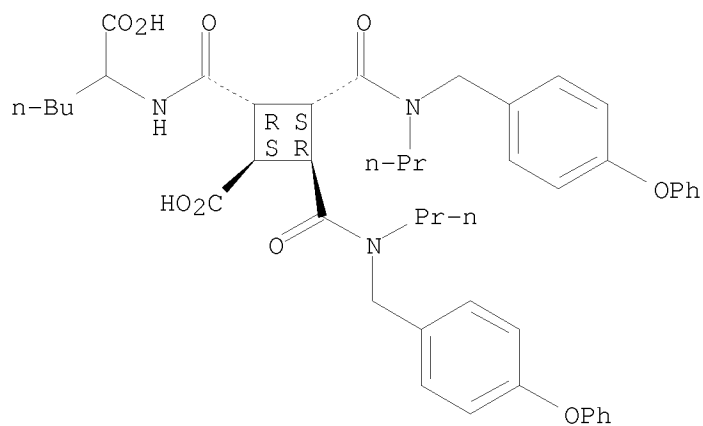
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[pentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



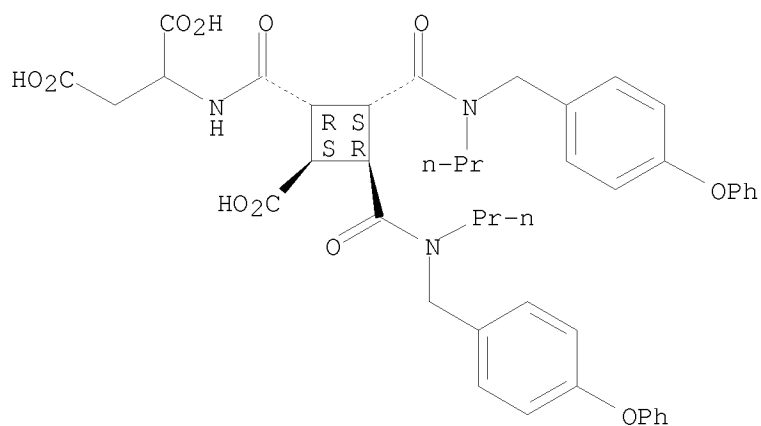
RN 185209-33-0 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxypentyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 185209-34-1 CAPLUS  
 CN Aspartic acid, N-[[[(1R,2S,3R,4S)-2-carboxy-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]cyclobutyl]carbonyl]-, rel- (CA INDEX NAME)

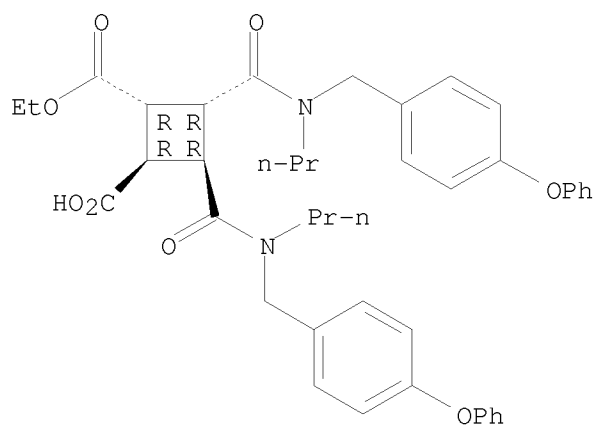
Relative stereochemistry.



RN 185209-36-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-ethyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

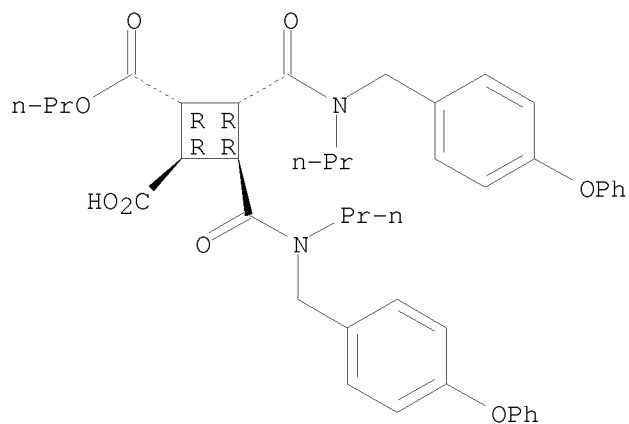
Relative stereochemistry.



RN 185209-37-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-propyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

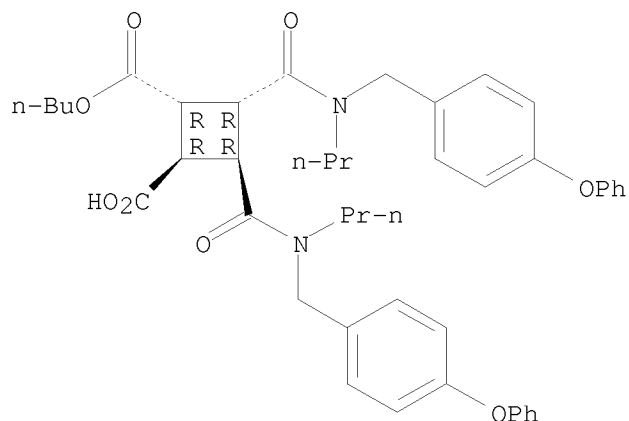
Relative stereochemistry.



RN 185209-38-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-butyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

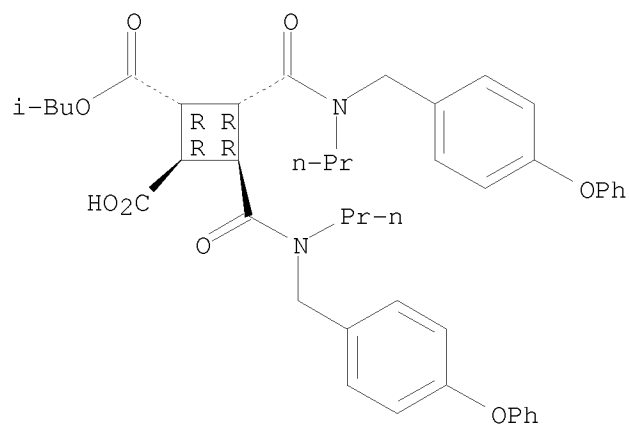
Relative stereochemistry.



RN 185209-39-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, mono(2-methylpropyl) ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

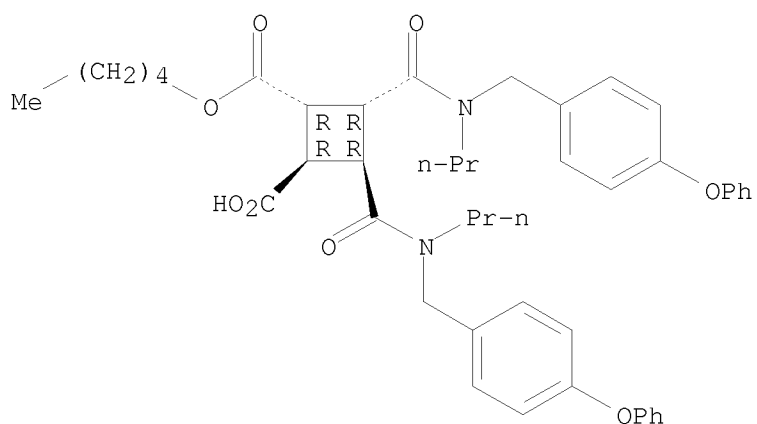
Relative stereochemistry.



RN 185209-40-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-pentyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

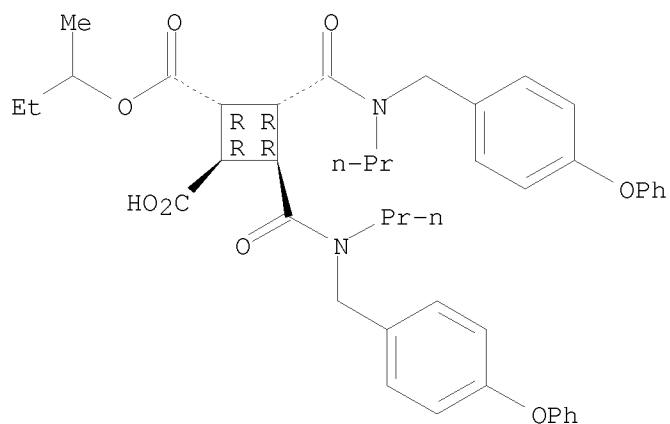
Relative stereochemistry.



RN 185209-41-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(1-methylpropyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

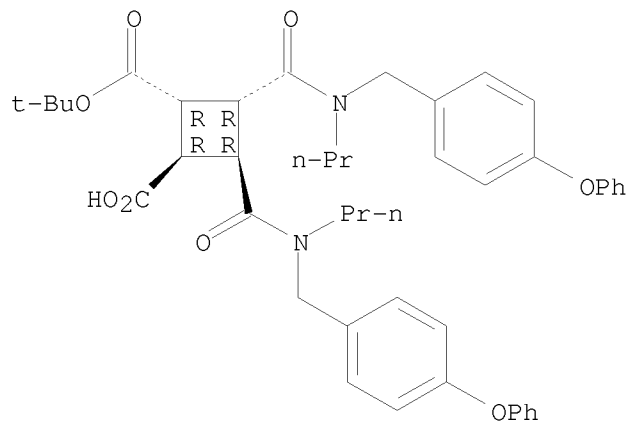
Relative stereochemistry.



RN 185209-42-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(1,1-dimethylethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

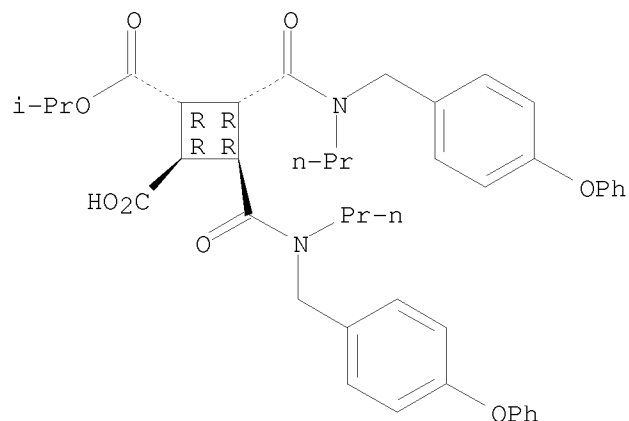
Relative stereochemistry.



RN 185209-43-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(1-methylethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

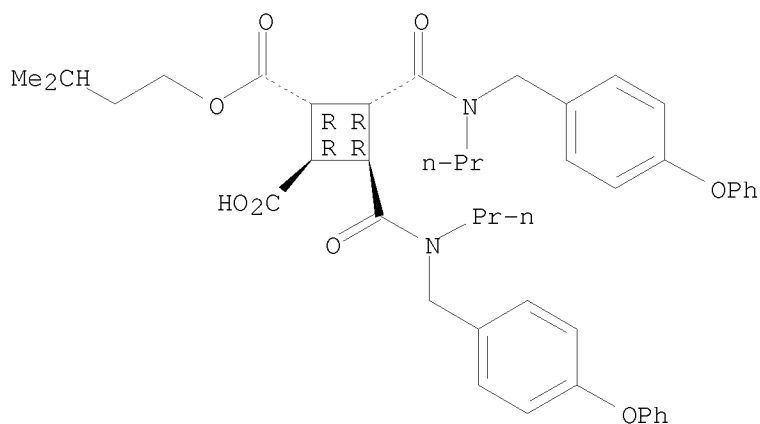
Relative stereochemistry.



RN 185209-44-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, mono(3-methylbutyl) ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

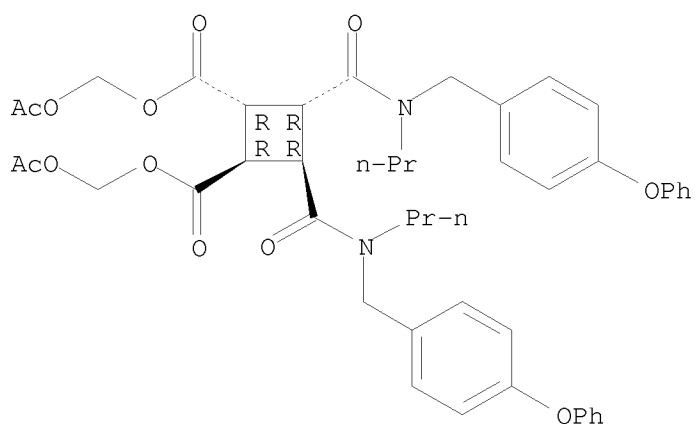


RN 185209-47-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(acetyloxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

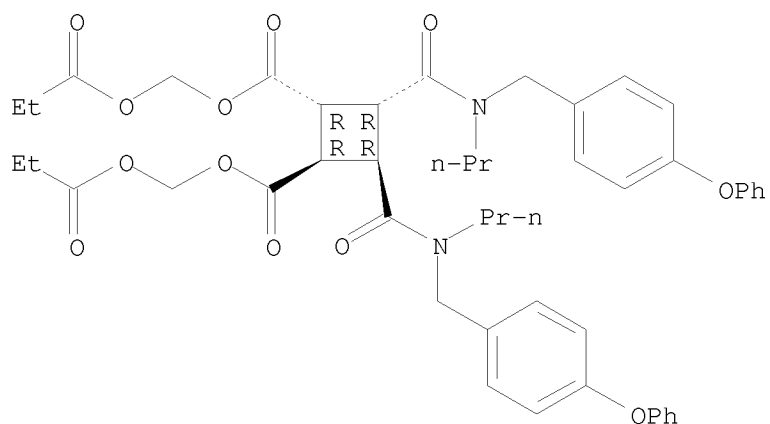




RN 185209-48-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

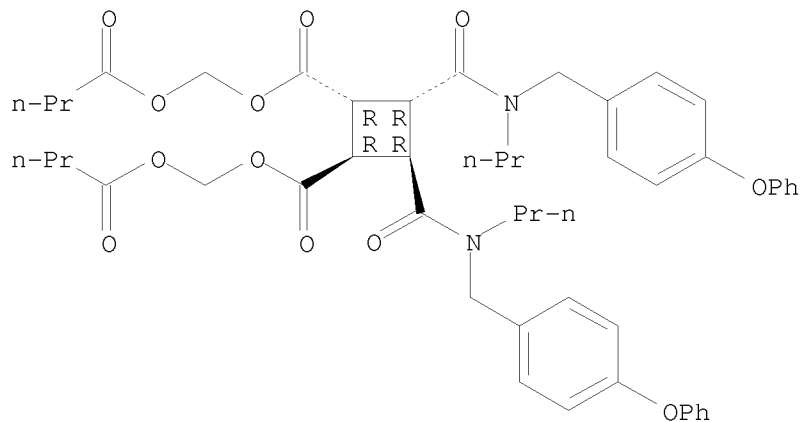
Relative stereochemistry.



RN 185209-49-8 CAPLUS

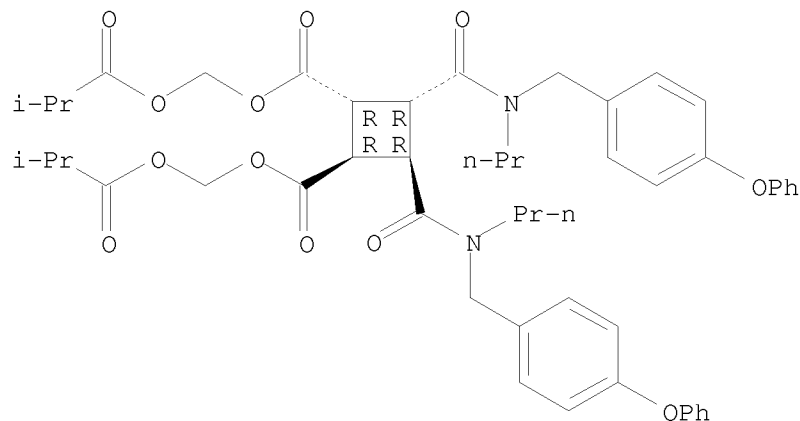
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(1-oxobutoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



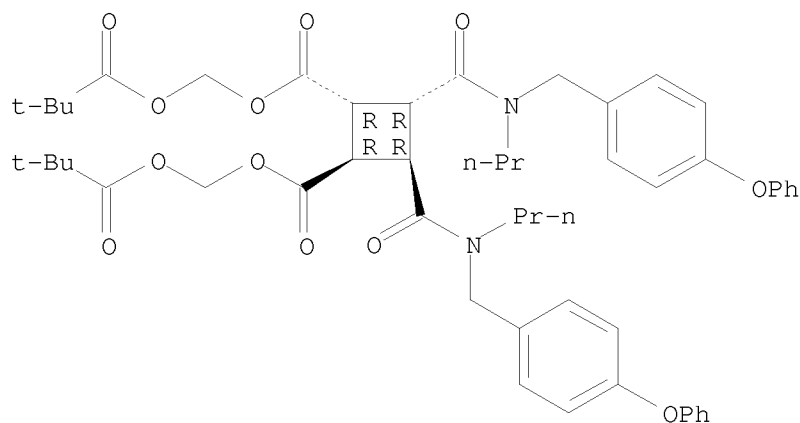
RN 185209-50-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(2-methyl-1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



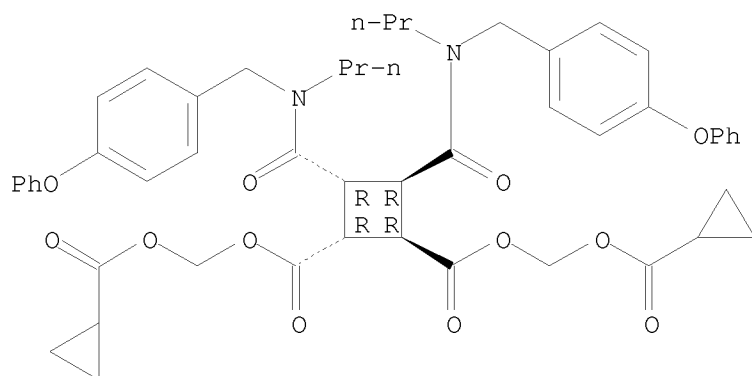
RN 185209-51-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(2,2-dimethyl-1-oxopropoxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 185209-52-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(cyclopropylcarbonyl)oxy]methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

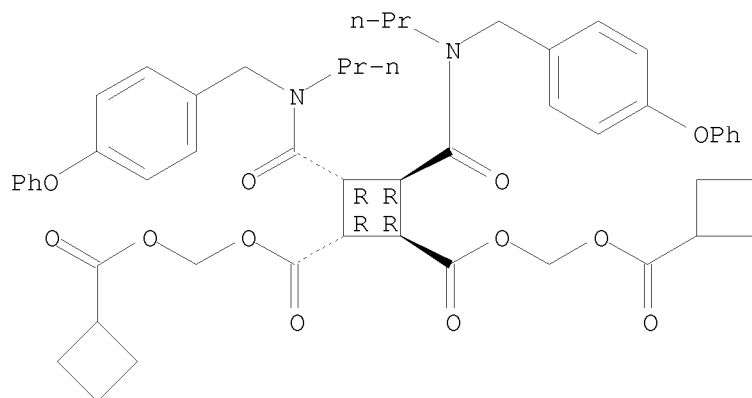
Relative stereochemistry.



RN 185209-53-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[[(cyclobutylcarbonyl)oxy]methyl] ester], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

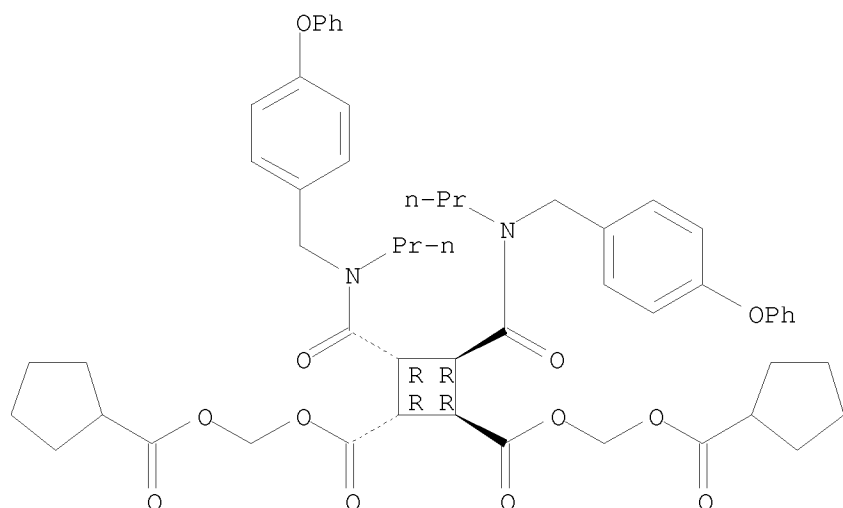
Relative stereochemistry.



RN 185209-54-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[[(cyclopentylcarbonyl)oxy]methyl] ester], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

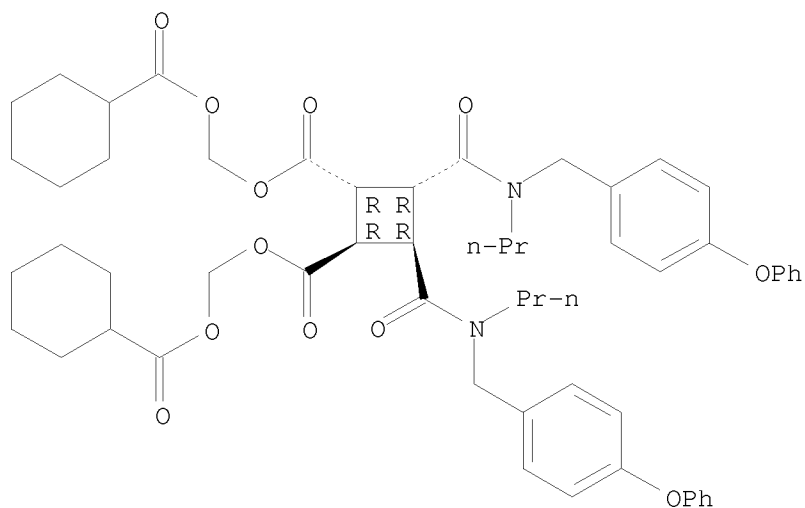
Relative stereochemistry.



RN 185209-55-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[[[(cyclohexylcarbonyl)oxy]methyl] ester], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

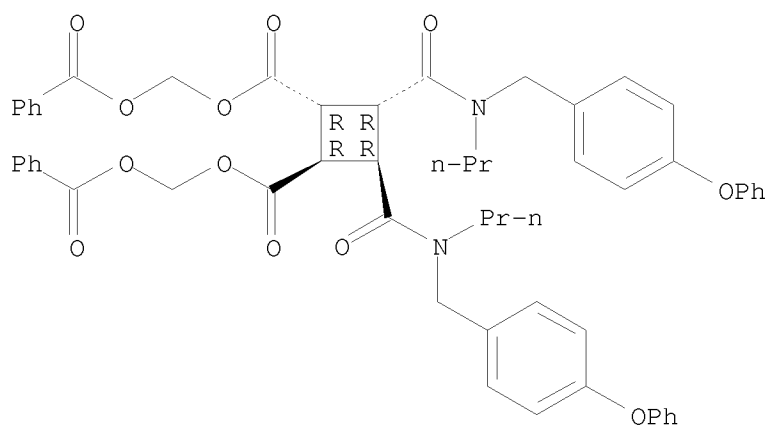
Relative stereochemistry.



RN 185209-56-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(benzoyloxy)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

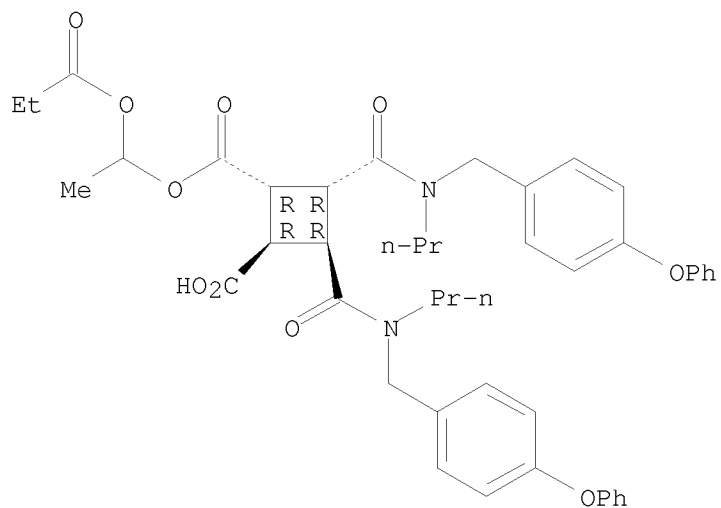
Relative stereochemistry.



RN 185209-57-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[1-(1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

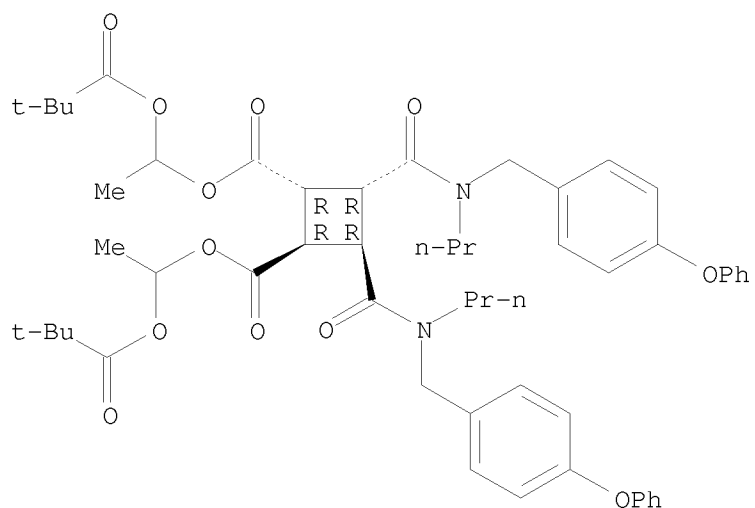
Relative stereochemistry.



RN 185209-58-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[1-(2,2-dimethyl-1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

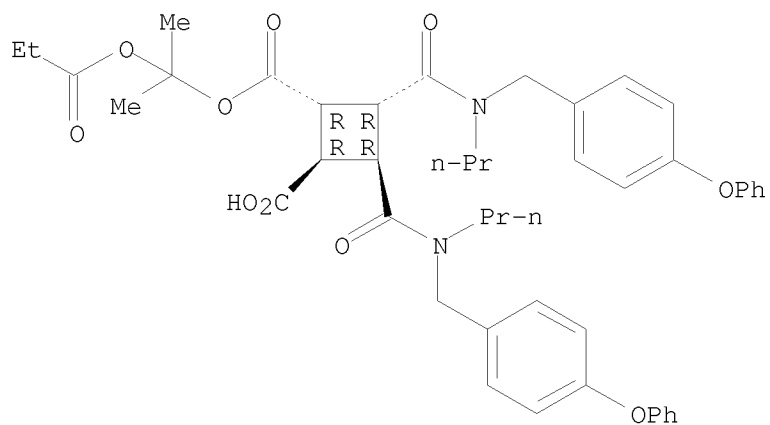
Relative stereochemistry.



RN 185209-59-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[1-methyl-1-(1-oxopropoxy)ethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

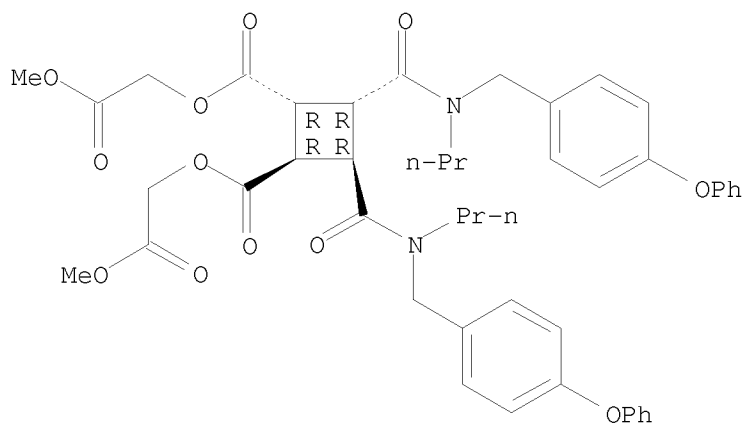
Relative stereochemistry.



RN 185209-60-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis(2-methoxy-2-oxoethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

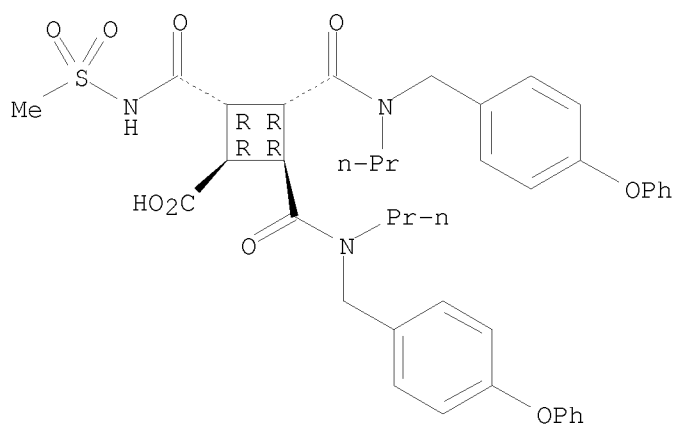
Relative stereochemistry.



RN 185209-64-7 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(methylsulfonyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

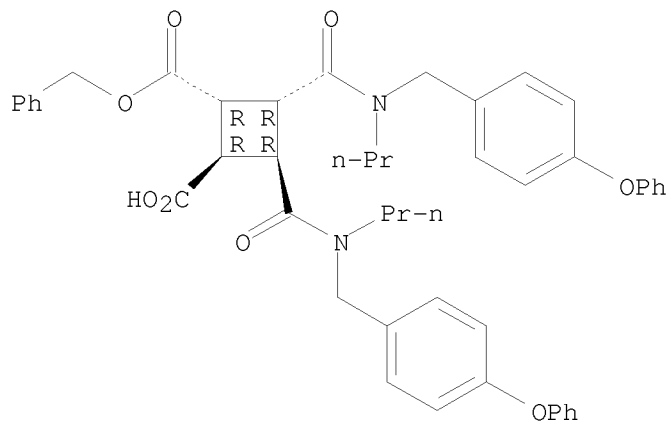
Relative stereochemistry.



RN 185209-71-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



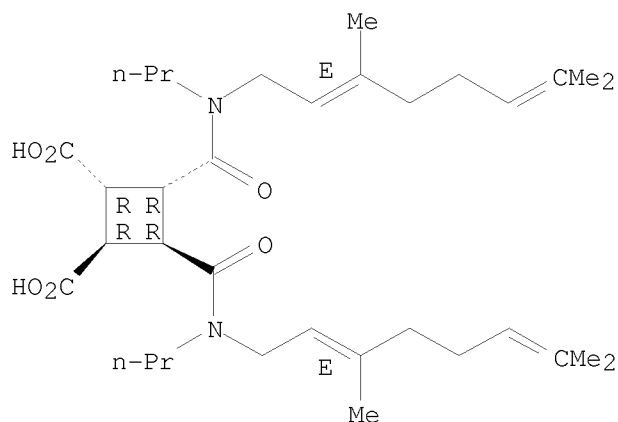
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[2-(diethylamino)-2-oxoethyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(2,3-dihydro-1H-inden-5-yl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(2E)-3,7-dimethyl-2,6-octadien-1-yl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.  
Double bond geometry as shown.

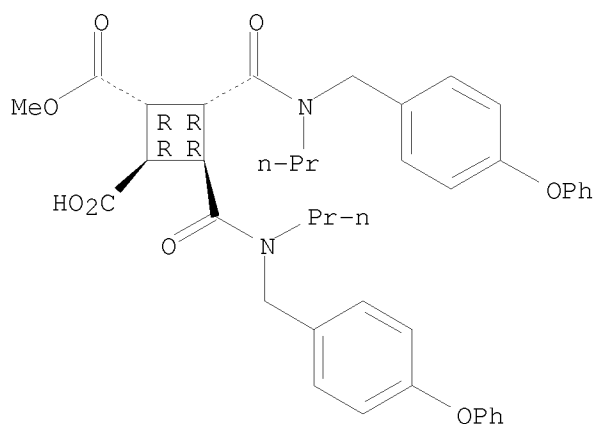




RN 185209-78-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-methyl ester, (1R,2R,3R,4R)-rel-(-)- (CA INDEX NAME)

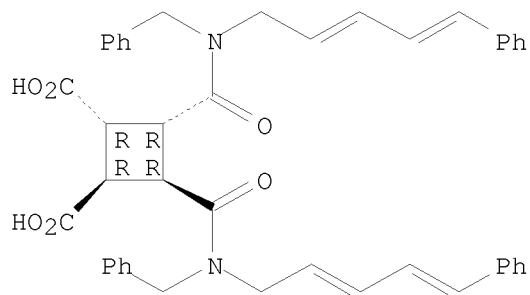
Rotation (-). Absolute stereochemistry unknown.



RN 185209-86-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(phenylmethyl)(5-phenyl-2,4-pentadien-1-yl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

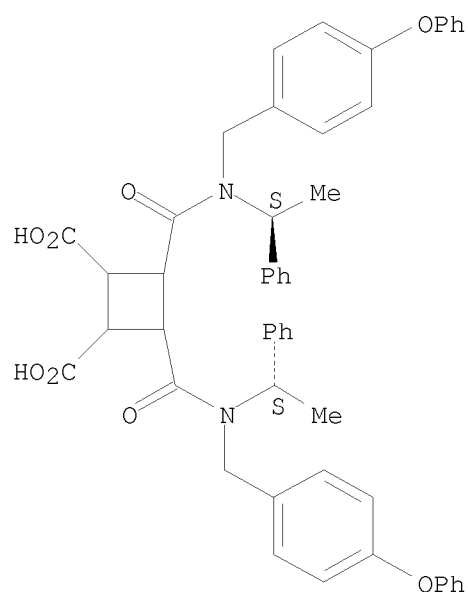
Relative stereochemistry.  
Double bond geometry unknown.



RN 185253-88-7 CAPLUS

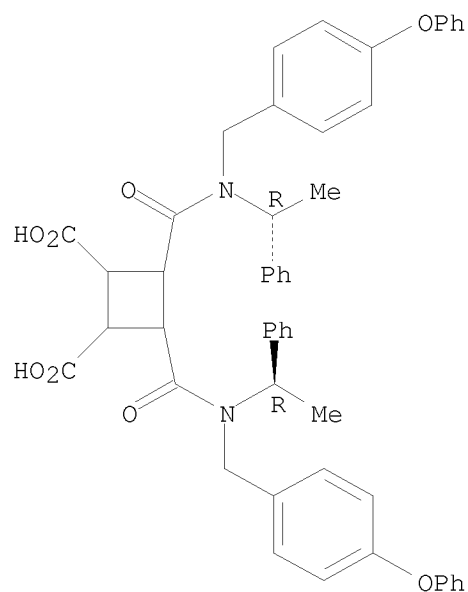
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxymethyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



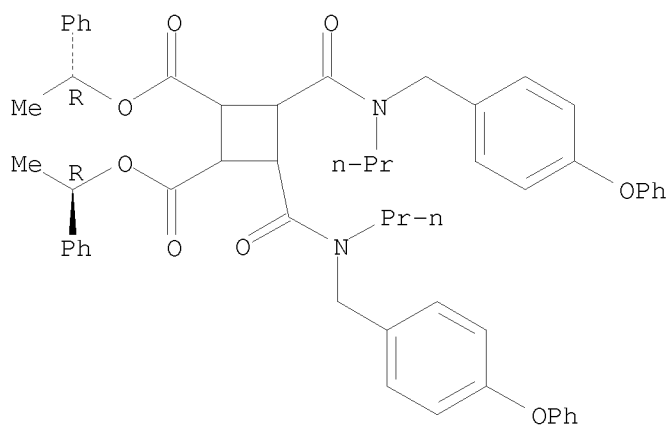
RN 185253-90-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl][(1R)-1-phenylethyl]amino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



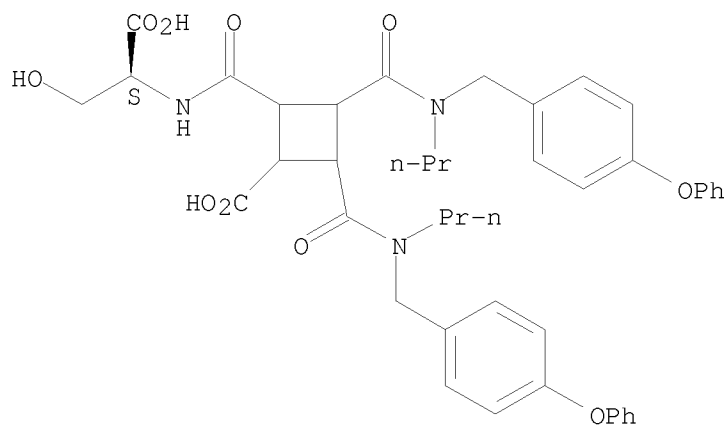
RN 185253-91-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis[(1R)-1-phenylethyl] ester (CA INDEX NAME)

Absolute stereochemistry.



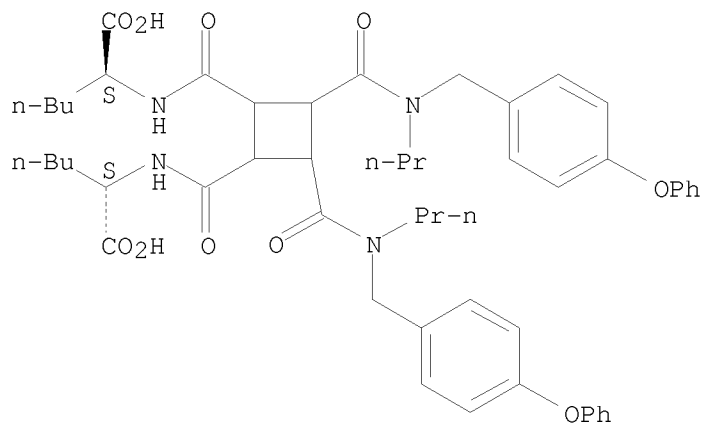
RN 185253-92-3 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[[[(1S)-1-carboxy-2-hydroxyethyl]amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



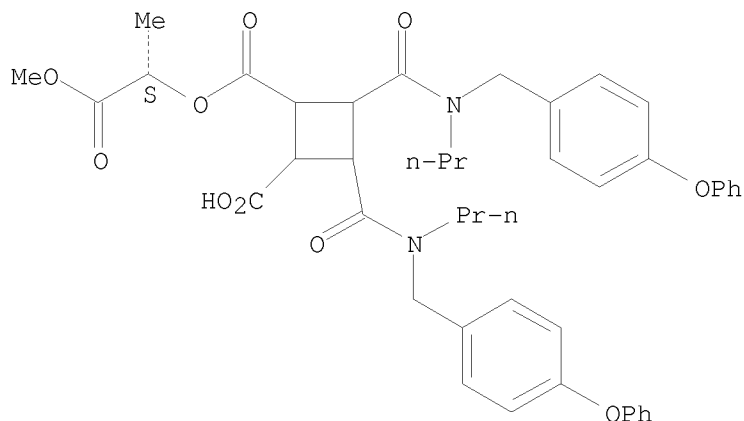
RN 185254-05-1 CAPLUS  
 CN L-Norleucine, N,N'-[[3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-1,2-cyclobutanediyl]dicarbonyl]bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



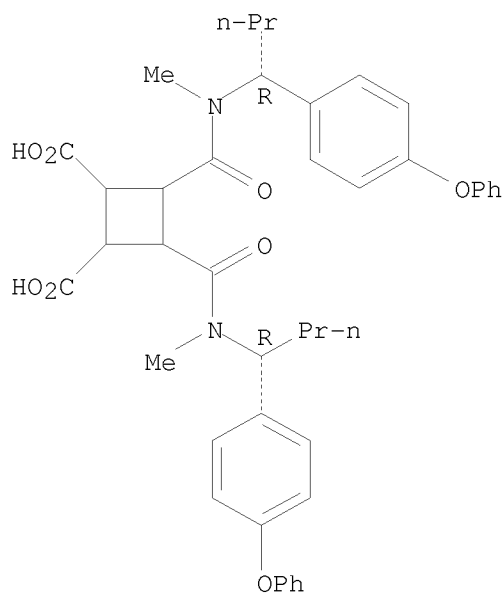
RN 185254-41-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[(1S)-2-methoxy-1-methyl-2-oxoethyl] ester (CA INDEX NAME)

Absolute stereochemistry.



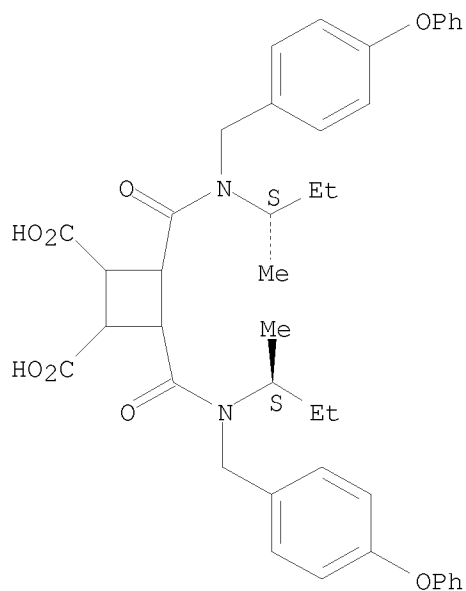
RN 185254-60-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1R)-1-(4-phenoxyphenyl)butyl]amino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



RN 185254-68-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(1S)-1-methylpropyl][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)

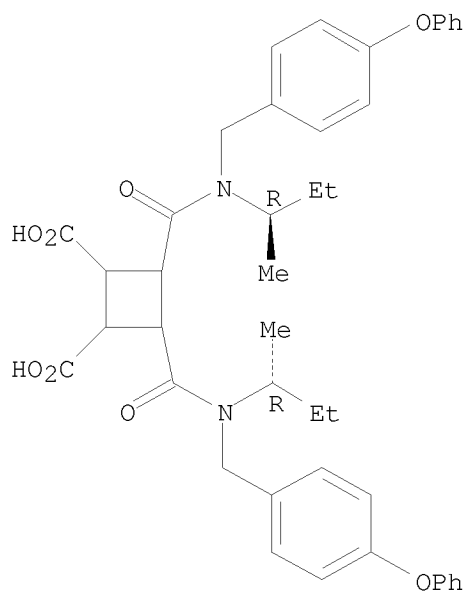
Absolute stereochemistry.



RN 185254-69-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(1R)-1-methylpropyl][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)

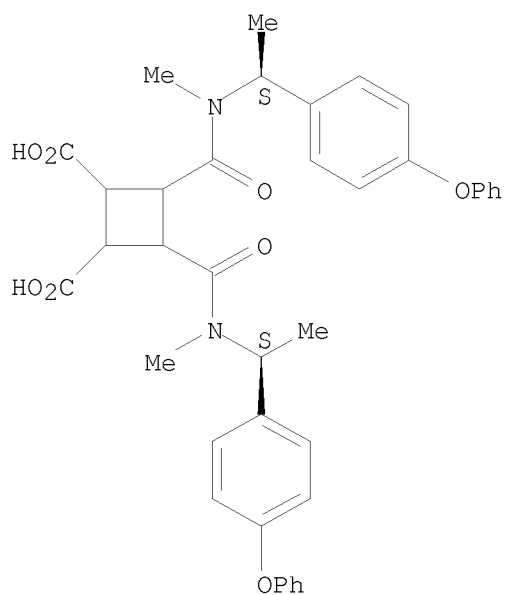
Absolute stereochemistry.



RN 185254-70-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1S)-1-(4-phenoxyphenyl)ethyl]amino]carbonyl]- (CA INDEX NAME)

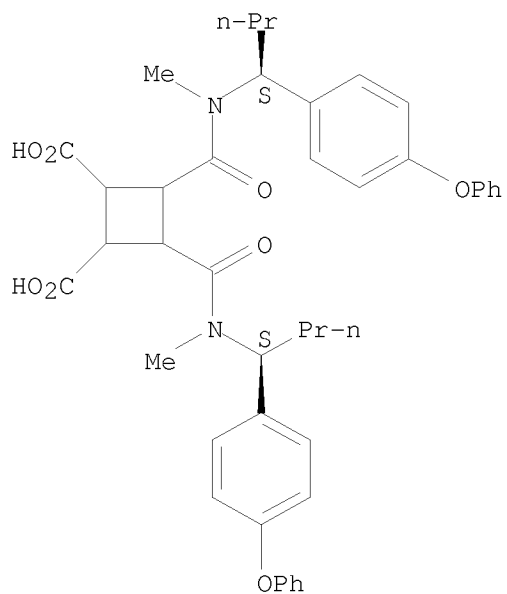
Absolute stereochemistry.



RN 185254-77-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1S)-1-(4-phenoxyphenyl)butyl]amino]carbonyl]- (CA INDEX NAME)

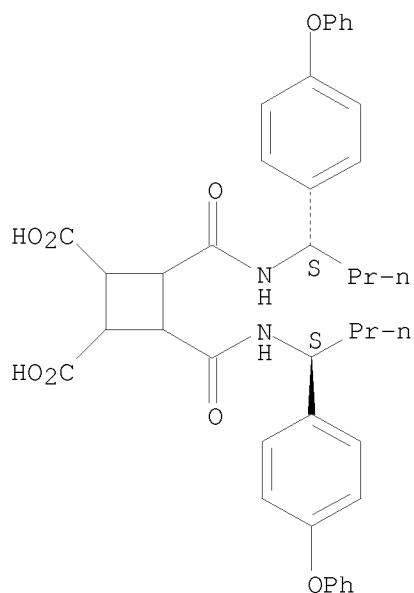
Absolute stereochemistry.



RN 185254-78-8 CAPLUS

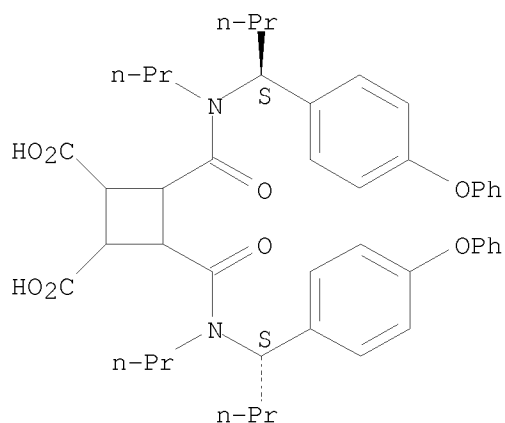
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[1-(4-phenoxyphenyl)butyl]amino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



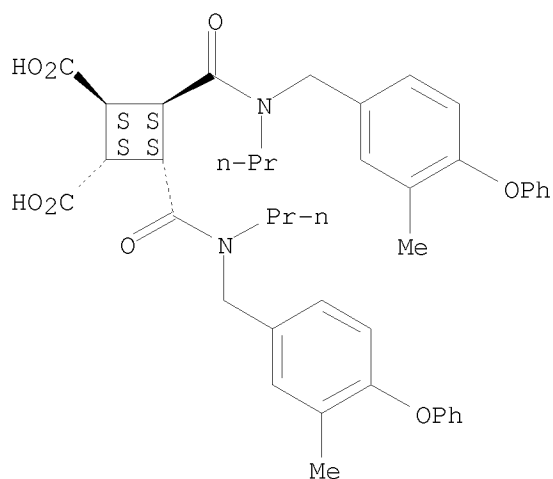
RN 185254-79-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(1S)-1-(4-phenoxyphenyl)butyl]propylamino]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.

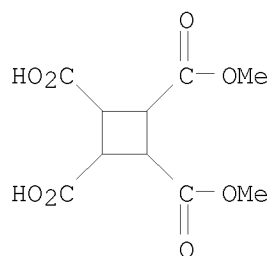


IT 169942-48-7  
 RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); BIOL (Biological study); PROC (Process)  
 (preparation of N-(4-phenoxybenzyl)aminocarbonyl-substituted cyclobutane derivs. as inhibitors of protein farnesyltransferase)  
 RN 169942-48-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(3-methyl-4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



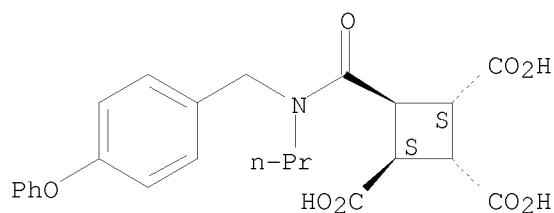
IT 91109-83-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of N-(4-phenoxybenzyl)aminocarbonyl-substituted cyclobutane  
 derivs. as inhibitors of protein farnesyltransferase)  
 RN 91109-83-0 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester (CA INDEX  
 NAME)



IT 169942-84-1P 169942-85-2P 169943-03-7P  
 169943-05-9P 169943-06-0P 169943-07-1P  
 169943-15-1P 169943-16-2P 169943-39-9P  
 170207-72-4P 184488-11-7P 185209-95-4P  
 185209-96-5P 185209-98-7P 185210-17-7P  
 185210-18-8P 185210-20-2P 185254-81-3P  
 185254-82-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of N-(4-phenoxybenzyl)aminocarbonyl-substituted cyclobutane  
 derivs. as inhibitors of protein farnesyltransferase)  
 RN 169942-84-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )- (9CI) (CA INDEX NAME)

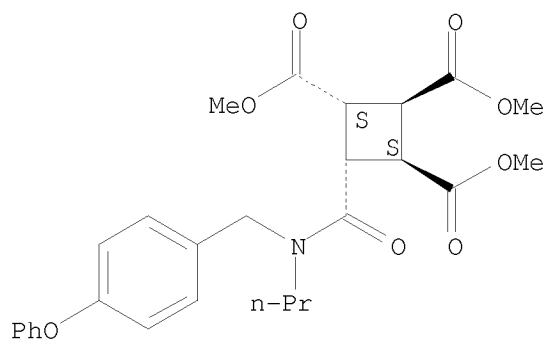
Relative stereochemistry.





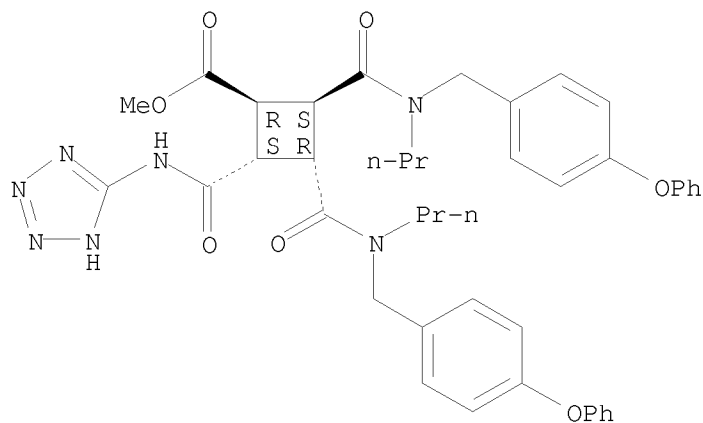
RN 169942-85-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, trimethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



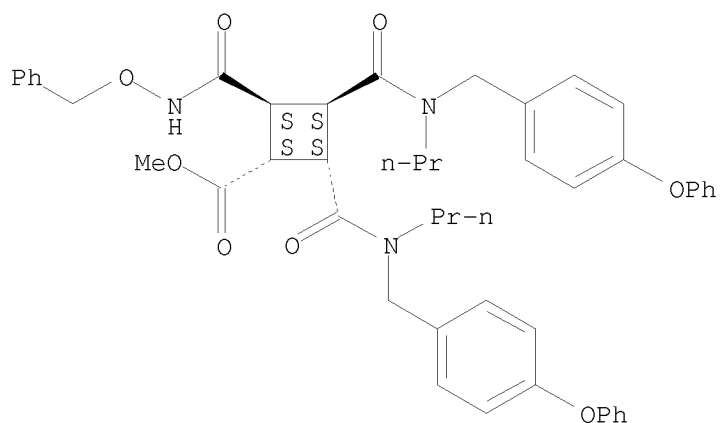
RN 169943-03-7 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[(1H-tetrazol-5-ylamino)carbonyl]-, methyl ester, (1R,2S,3R,4S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 169943-05-9 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[[[(phenylmethoxy)amino]carbonyl]-, methyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

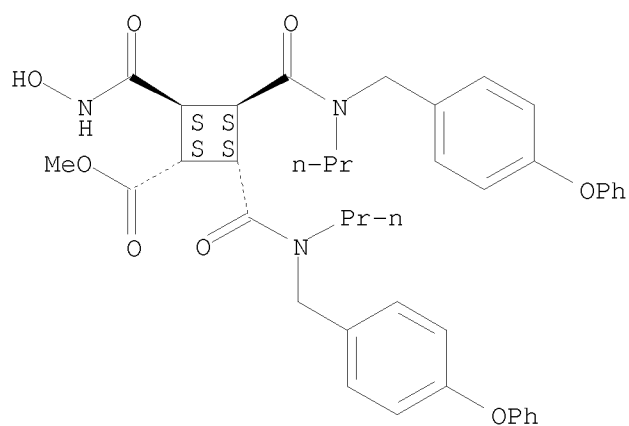
Relative stereochemistry.



RN 169943-06-0 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[(hydroxyamino)carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, methyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

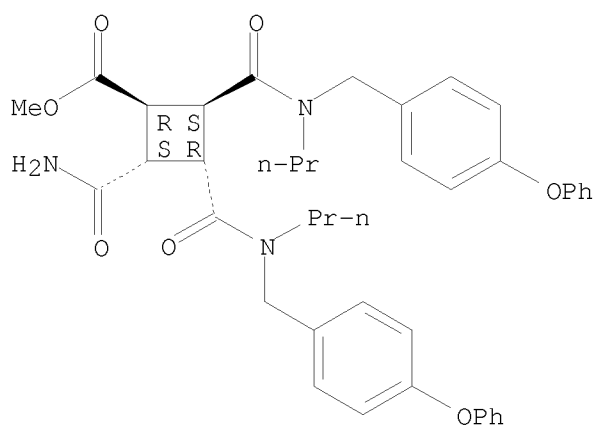
Relative stereochemistry.



RN 169943-07-1 CAPLUS

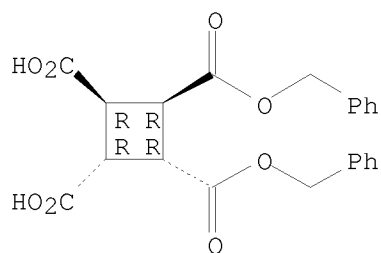
CN Cyclobutanecarboxylic acid, 2-(aminocarbonyl)-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, methyl ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



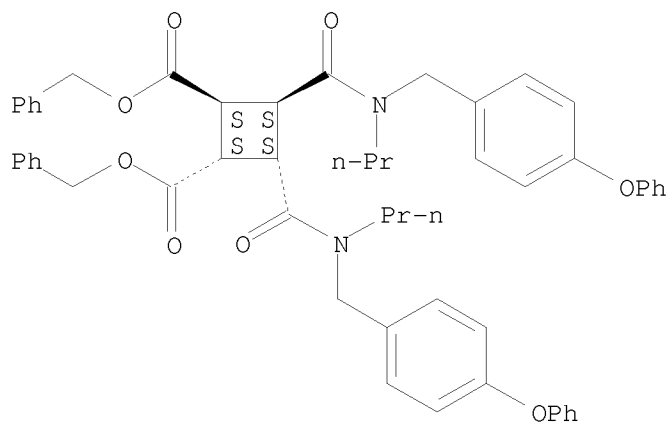
RN 169943-15-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester,  
 (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

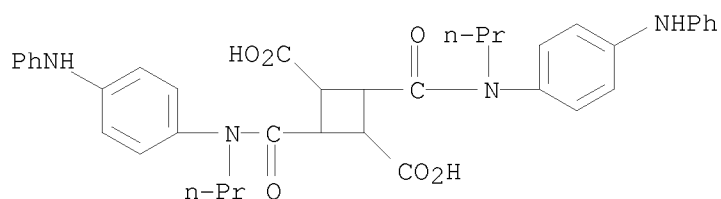


RN 169943-16-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-  
 phenoxyphenyl)methyl]propylamino]carbonyl]-, bis(phenylmethyl) ester,  
 (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



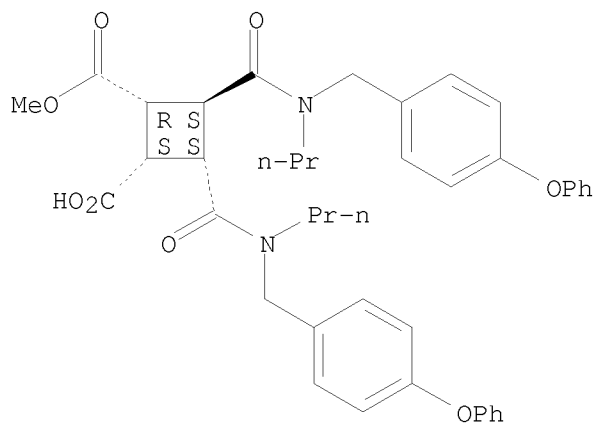
RN 169943-39-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-  
 (phenylamino)phenyl]propylamino]carbonyl]- (CA INDEX NAME)



RN 170207-72-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1R,2S,3S,4S)-rel- (9CI) (CA INDEX NAME)

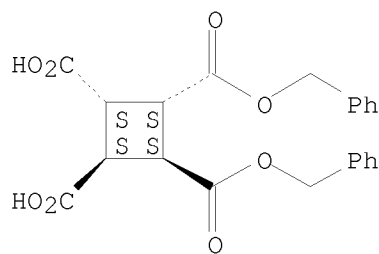
Relative stereochemistry.



RN 184488-11-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

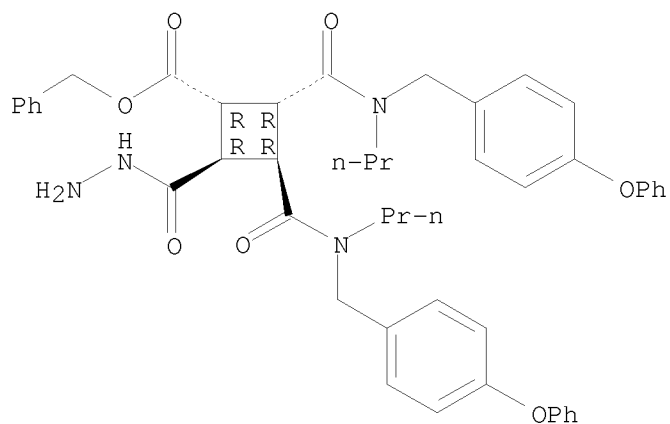
Rotation (+). Absolute stereochemistry unknown.



RN 185209-95-4 CAPLUS

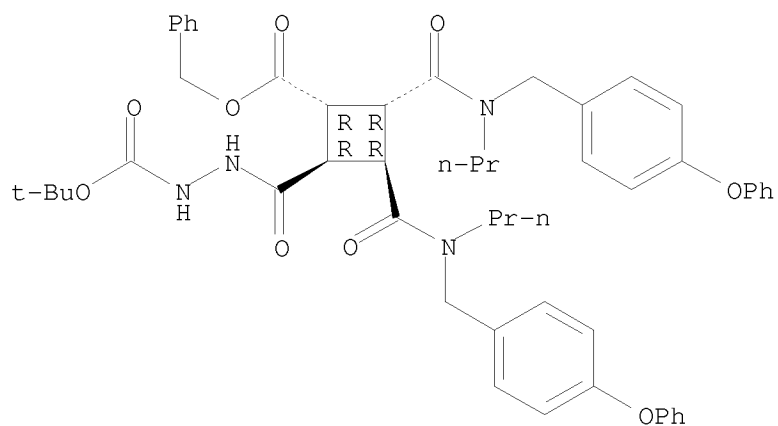
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(phenylmethyl) ester, 2-hydrazide, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



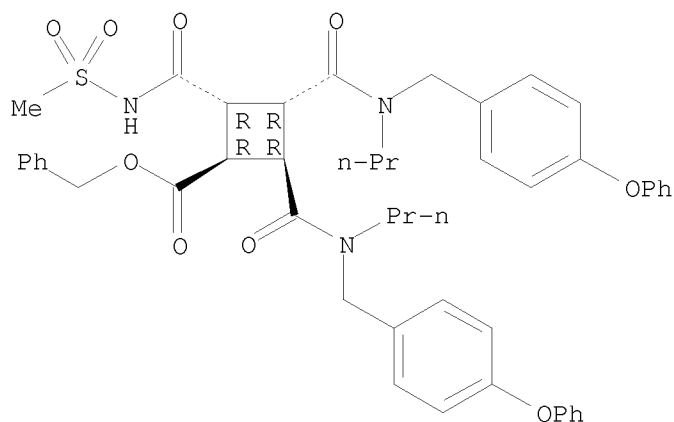
RN 185209-96-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(phenylmethyl) ester, 2-[2-[(1,1-dimethylethoxy)carbonyl]hydrazide], (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 185209-98-7 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[[[(methylsulfonyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, phenylmethyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

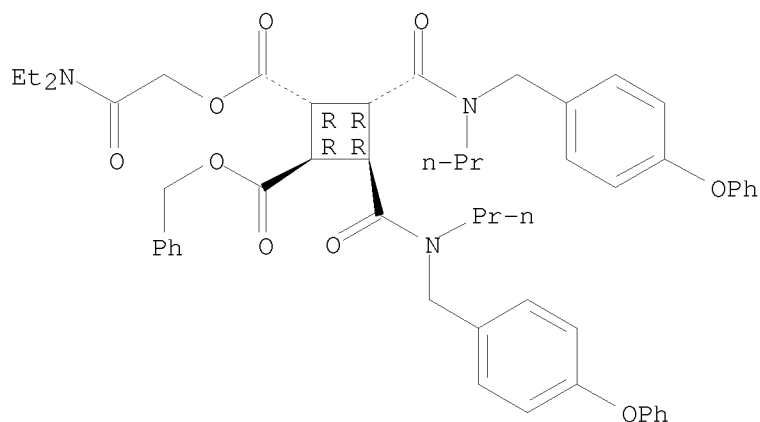
Relative stereochemistry.



RN 185210-17-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-[2-(diethylamino)-2-oxoethyl] 2-(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

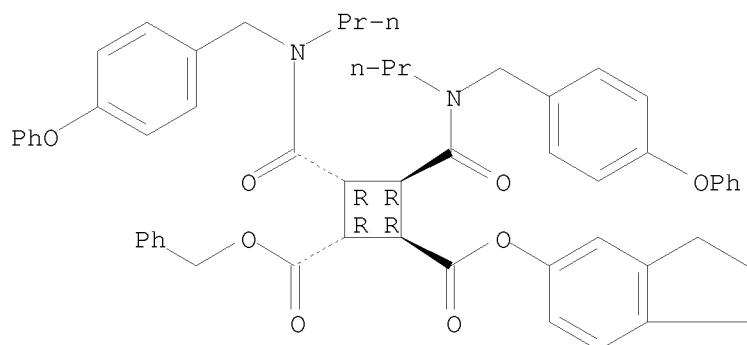
Relative stereochemistry.



RN 185210-18-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-(2,3-dihydro-1H-inden-5-yl) 2-(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

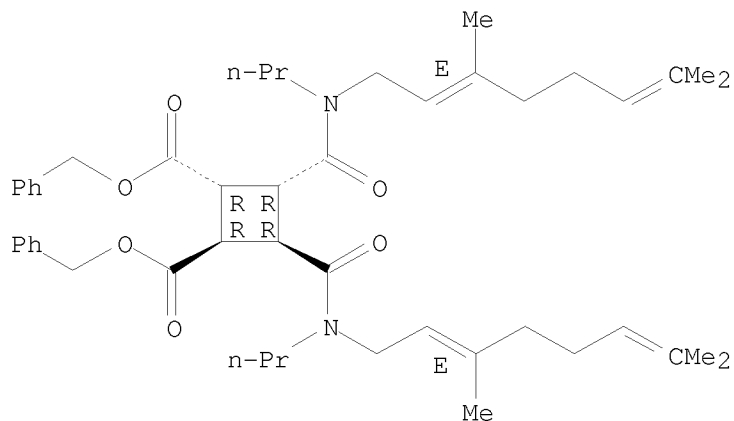
Relative stereochemistry.



RN 185210-20-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(2E)-3,7-dimethyl-2,6-octadien-1-yl]propylamino]carbonyl]-, 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

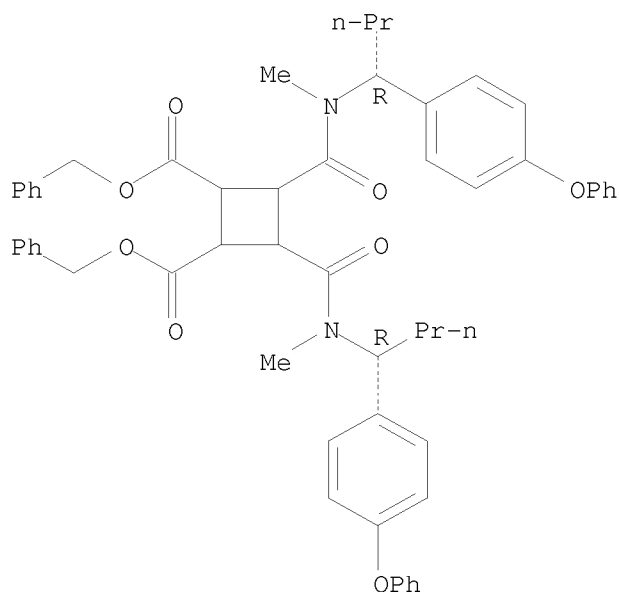
Rotation (+). Absolute stereochemistry unknown.  
Double bond geometry as shown.



RN 185254-81-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1R)-1-(4-phenoxyphenyl)butyl]amino]carbonyl]-, 1,2-bis(phenylmethyl) ester (CA INDEX NAME)

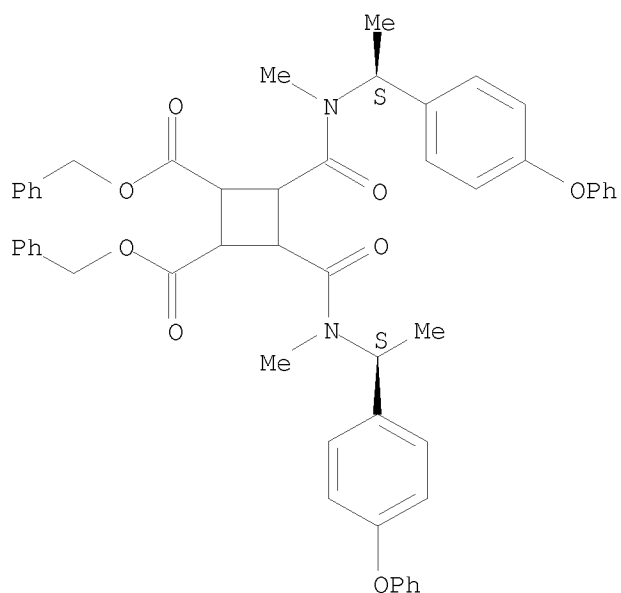
Absolute stereochemistry.



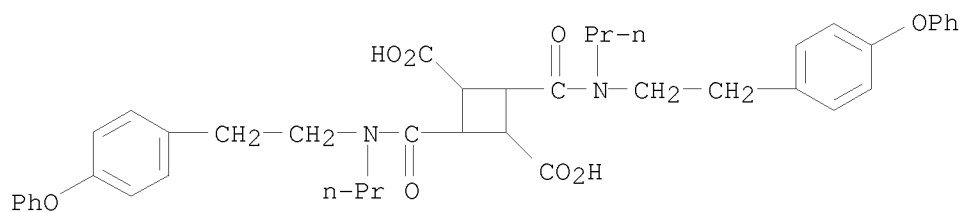
RN 185254-82-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(1S)-1-(4-phenoxyphenyl)ethyl]amino]carbonyl]-, 1,2-bis(phenylmethyl) ester (CA INDEX NAME)

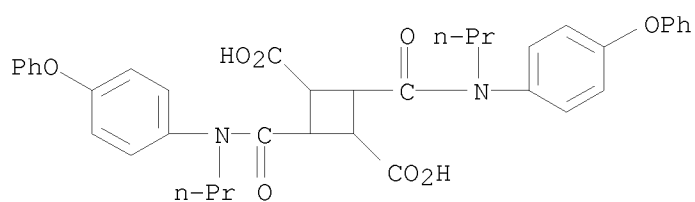
Absolute stereochemistry.



IT 169943-31-1P 169943-32-2P 185210-39-3P  
 185210-40-6P 185210-41-7P 185210-42-8P  
 185210-43-9P 185210-44-0P 185210-45-1P  
 185210-46-2P 185210-47-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of N-(4-phenoxybenzyl)aminocarbonyl-substituted cyclobutane  
 derivs. as inhibitors of protein farnesyltransferase)  
 RN 169943-31-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[2-(4-  
 phenoxyphenyl)ethyl]propylamino]carbonyl]- (CA INDEX NAME)

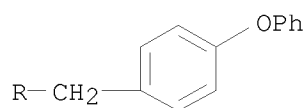
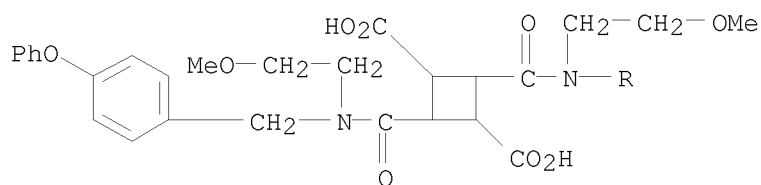


RN 169943-32-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[2-(4-  
 phenoxyphenyl)propylamino]carbonyl]- (CA INDEX NAME)



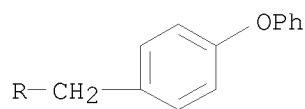
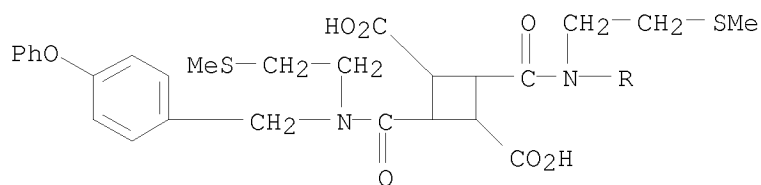
RN 185210-39-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[2-methoxyethyl][(4-  
 phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)





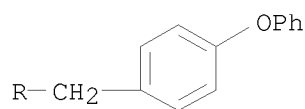
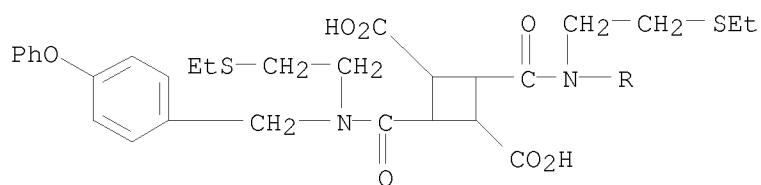
RN 185210-40-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(methylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)



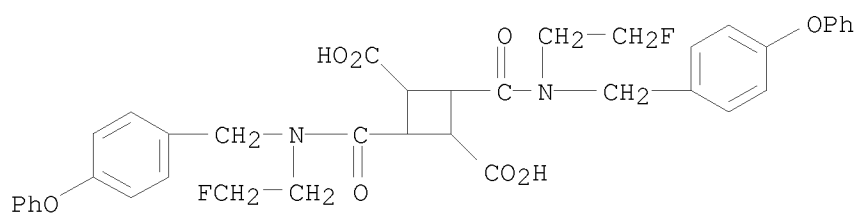
RN 185210-41-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(ethylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)



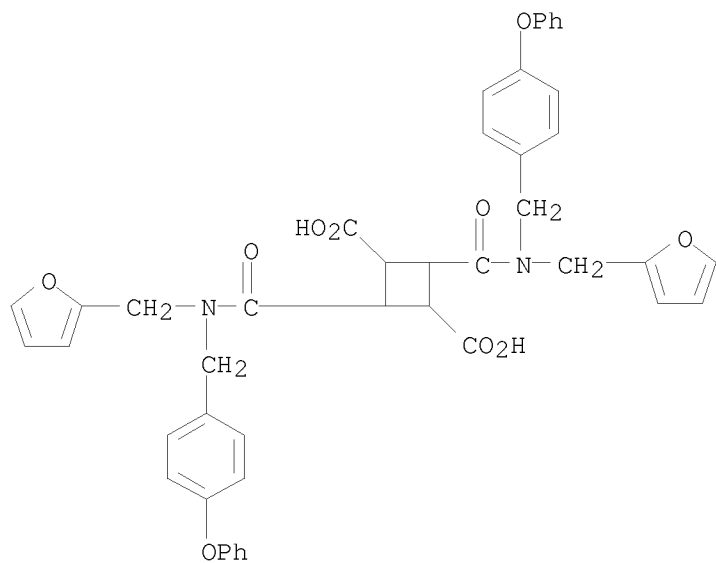
RN 185210-42-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(fluoroethyl)][(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)



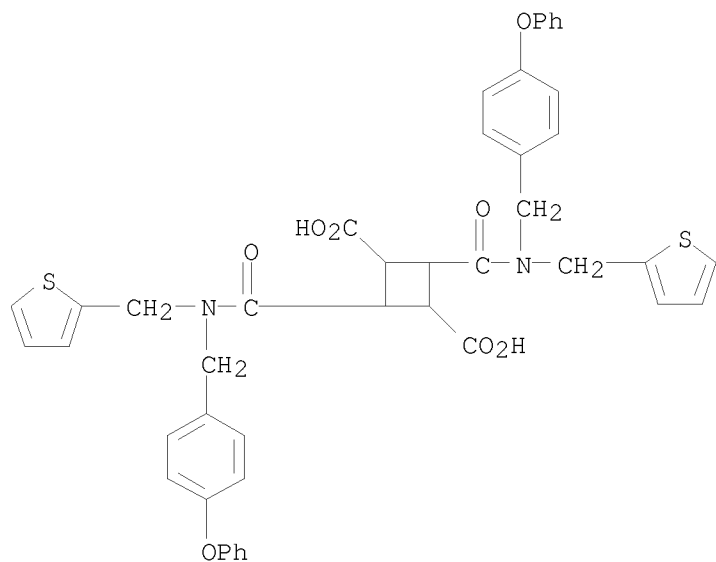
RN 185210-43-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-furanylmethyl)(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)

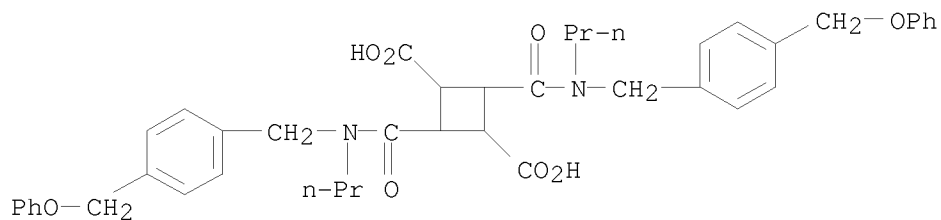


RN 185210-44-0 CAPLUS

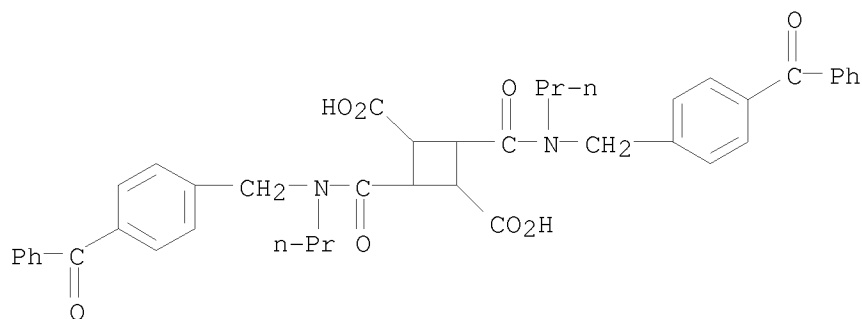
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-thienylmethyl)(4-phenoxyphenyl)methyl]amino]carbonyl]- (CA INDEX NAME)



RN 185210-45-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenoxy)methyl]phenyl]methyl]propylamino]carbonyl]- (CA INDEX NAME)

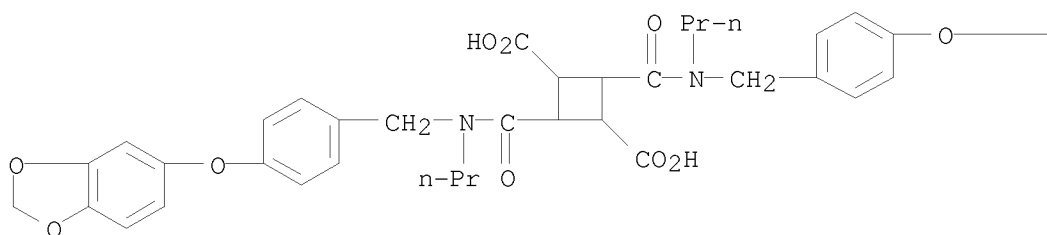


RN 185210-46-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-benzoylphenyl]methyl]propylamino]carbonyl]- (CA INDEX NAME)

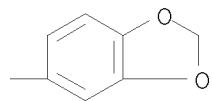


RN 185210-47-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(1,3-benzodioxol-5-yloxy)phenyl]methyl]propylamino]carbonyl]- (CA INDEX NAME)

PAGE 1-A



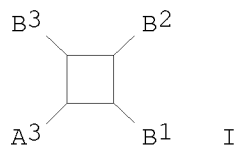
PAGE 1-B



ORIGINAL REFERENCE NO.: 126:11733a,11736a  
 TITLE: Preparation of cyclobutane-derivative inhibitors of  
 squalene synthase and protein farnesyl transferase  
 INVENTOR(S): Arendsen, David L.; Baker, William R.; Fakhoury,  
 Stephen A.; Fung, K. L. Anthony; Garvey, David S.;  
 McClellan, William J.; O'Connor, Stephen J.; Prasad,  
 Rajnandan N.; Rockway, Todd W.; et al.  
 PATENT ASSIGNEE(S): Abbott Laboratories, USA  
 SOURCE: PCT Int. Appl., 133 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9633159	A1	19961024	WO 1996-US5529	19960418
W: CA, JP, MX				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5831115	A	19981103	US 1996-626859	19960412
EP 821665	A1	19980204	EP 1996-912978	19960418
EP 821665	B1	20011004		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
JP 11504017	T	19990406	JP 1996-531980	19960418
AT 206390	T	20011015	AT 1996-912978	19960418
PRIORITY APPLN. INFO.:			US 1995-426553	A 19950421
			US 1995-428357	A 19950421
			US 1995-564524	A 19951129
			US 1996-626859	A 19960412
			WO 1996-US5529	W 19960418

OTHER SOURCE(S): MARPAT 126:59749  
 GI



AB The title compds (I; permitted substituent values are defined in the disclosure), useful for inhibiting protein farnesyl transferase and the farnesylation of the oncogene protein Ras, or for inhibiting de-novo squalene production resulting in the inhibition of cholesterol biosynthesis, are prepared Thus, (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )-1-[N-benzyl-N-[(4S, 5S)-(4-hydroxy-5-methyl)-6-phenylhexyl]aminocarbonyl]cyclobutane-2, 3, 4-tricarboxylic acid, prepared from propionaldehyde in 10 steps, demonstrated a 92% inhibition of protein farnesyl transferase at 1 $\mu$ M.

IT 184228-13-5P 184228-14-6P 184228-16-8P  
 184228-17-9P 184228-18-0P 184228-19-1P  
 184228-20-4P 184228-21-5P 184228-22-6P  
 184228-23-7P 184228-24-8P 184228-25-9P  
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 184228-29-3P 184228-30-6P 184228-31-7P  
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 184488-00-4P 184488-01-5P 184488-02-6P

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184488-06-0P 184488-07-1P

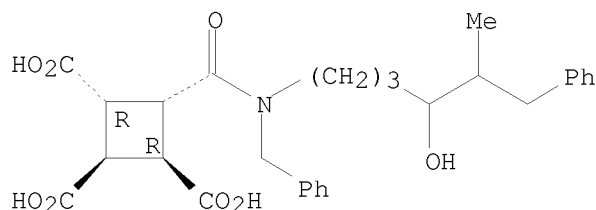
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of cyclobutane-derivative inhibitors of squalene synthase and protein farnesyl transferase)

RN 184228-13-5 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4-hydroxy-5-methyl-6-phenylhexyl) (phenylmethyl) amino] carbonyl]-,  
(1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )-[partial]- (9CI) (CA INDEX NAME)

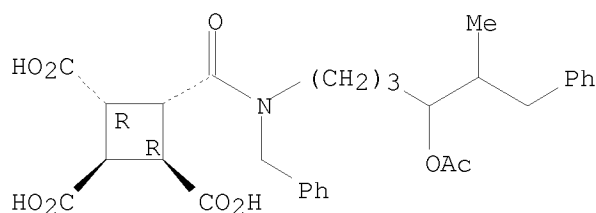
Relative stereochemistry.



RN 184228-14-6 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(acetyloxy)-5-methyl-6-phenylhexyl] (phenylmethyl) amino] carbonyl]-,  
(1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )-[partial]- (9CI) (CA INDEX NAME)

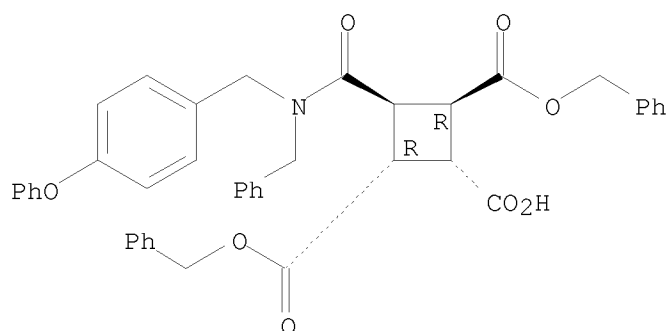
Relative stereochemistry.



RN 184228-16-8 CAPLUS

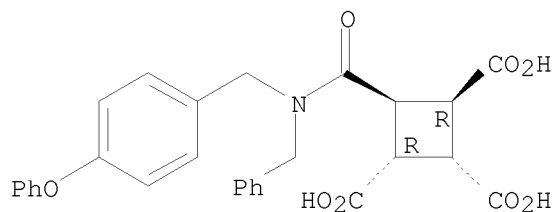
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4-phenoxyphenyl)methyl] (phenylmethyl) amino] carbonyl]-,  
1,3-bis(phenylmethyl) ester, (1 $\alpha$ , 2 $\beta$ , 3 $\beta$ , 4 $\alpha$ )- (9CI)  
(CA INDEX NAME)

Relative stereochemistry.



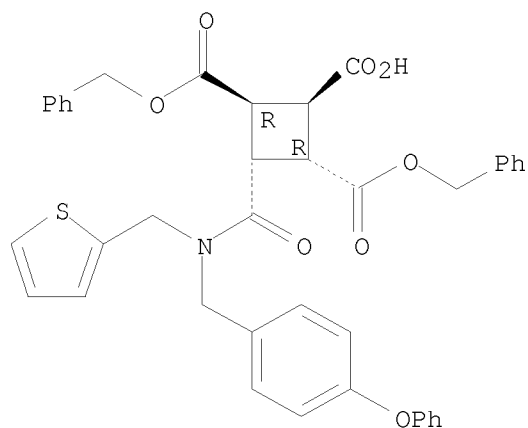
RN 184228-17-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



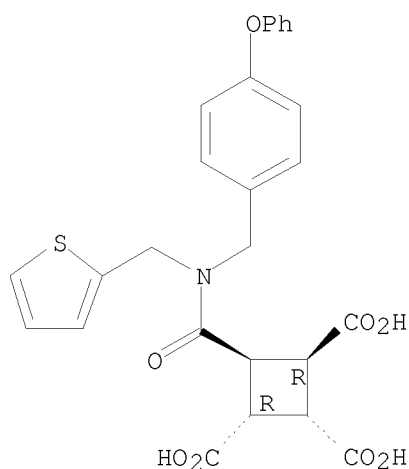
RN 184228-18-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-,  
 1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (9CI)  
 (CA INDEX NAME)

Relative stereochemistry.



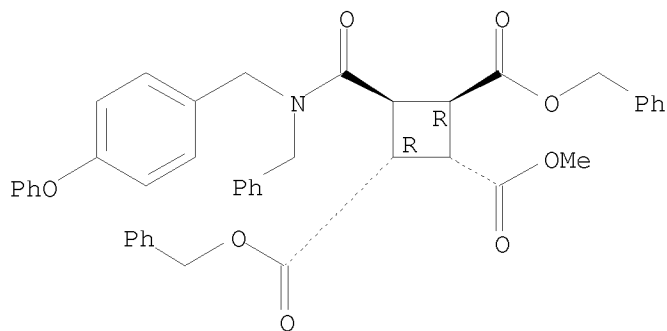
RN 184228-19-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



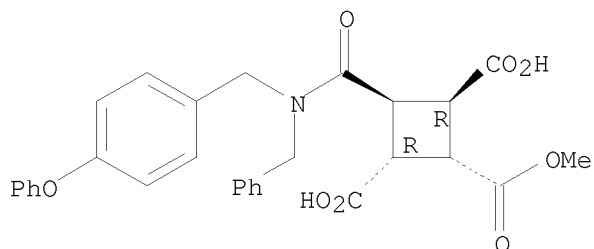
RN 184228-20-4 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 2-methyl  
 1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI)  
 (CA INDEX NAME)

Relative stereochemistry.



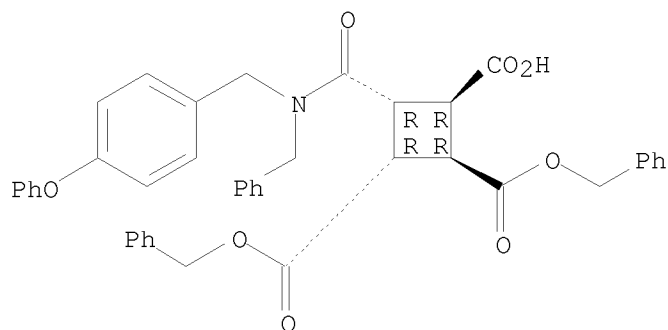
RN 184228-21-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 2-methyl  
 ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



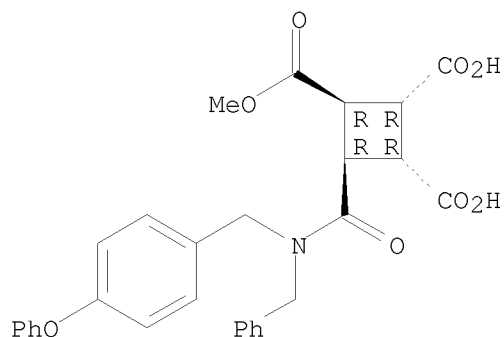
RN 184228-22-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



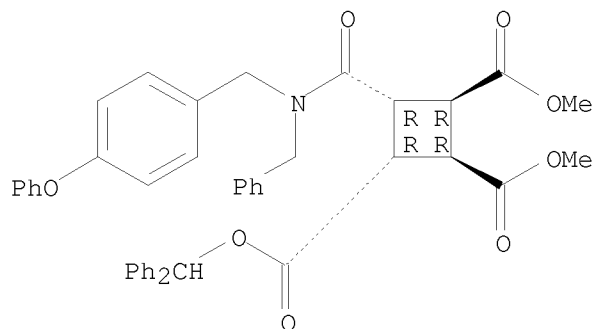
RN 184228-23-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1-methyl  
 ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 184228-24-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 1-(diphenylmethyl) 2,3-dimethyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

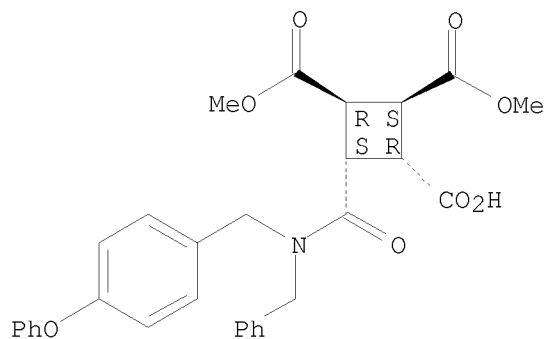
Relative stereochemistry.



RN 184228-25-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1,2-dimethyl  
 ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

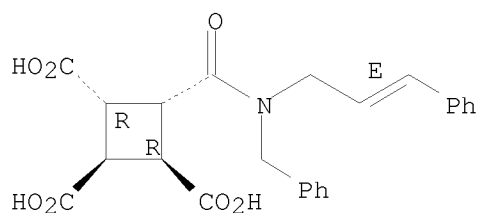


Relative stereochemistry.



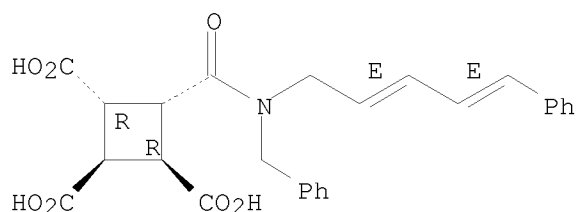
RN 184228-26-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[ (phenylmethyl) (3-phenyl-2-propenyl) amino]carbonyl]-,  
 [1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



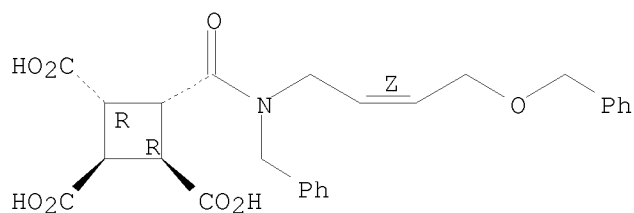
RN 184228-27-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[ (phenylmethyl) (5-phenyl-2,4-pentadienyl) amino]carbonyl]-,  
 [1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (2E,4E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



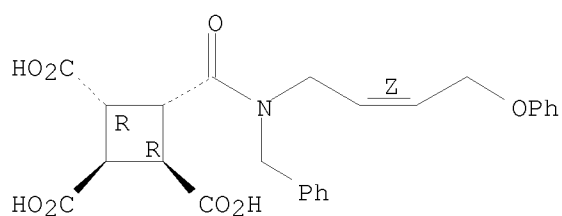
RN 184228-28-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[4-(phenylmethoxy)-2-butenyl] (phenylmethyl) amino]carbonyl]-,  
 [1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (Z)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



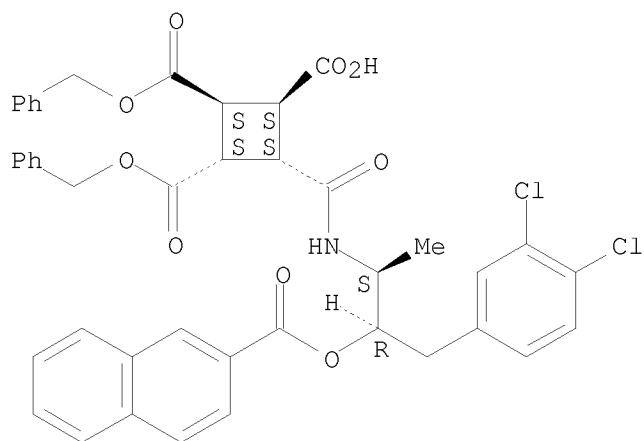
RN 184228-29-3 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[ (4-phenoxy-2-butenyl) (phenylmethyl) amino] carbonyl]-,  
 [1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$  (Z)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



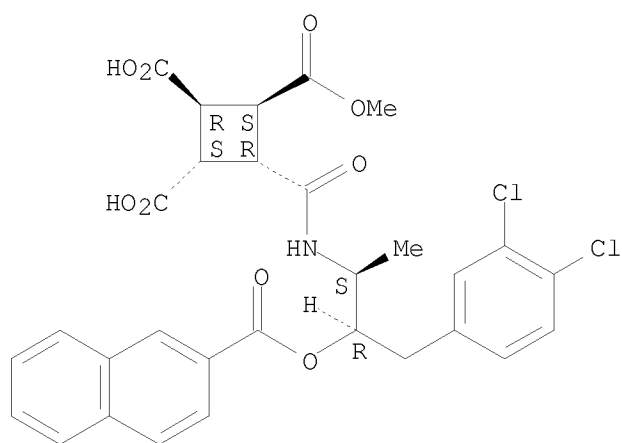
RN 184228-30-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[ (1S, 2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl] amino] carbonyl]-, 1,2-bis(phenylmethyl)  
 ester, (1S, 2S, 3S, 4S)- (CA INDEX NAME)

Absolute stereochemistry.



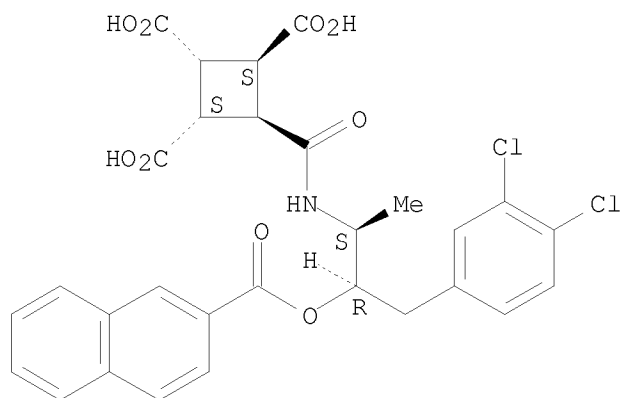
RN 184228-31-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[ (1S, 2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl] amino] carbonyl]-, 1-methyl ester,  
 (1S, 2R, 3S, 4R)- (CA INDEX NAME)

Absolute stereochemistry.



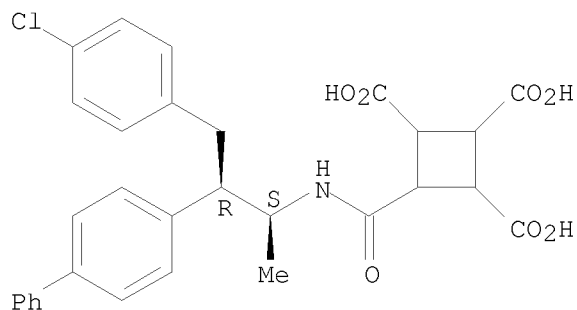
RN 184228-32-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-,  
 [1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (1R\*,2S\*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



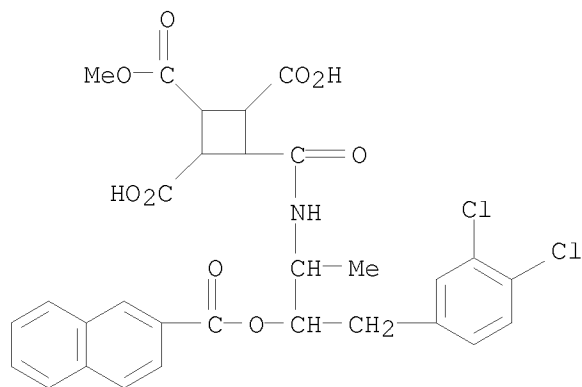
RN 184228-37-3 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[2-[1,1'-biphenyl]-4-yl-3-(4-chlorophenyl)-1-methylpropyl]amino]carbonyl]-, [4(1S,2R)]-[partial]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 184228-39-5 CAPLUS

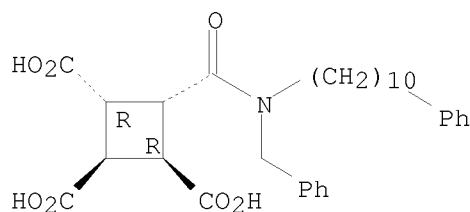
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 2-methyl ester,  
stereoisomer (9CI) (CA INDEX NAME)



RN 184228-45-3 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(10-phenyldecyl)(phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

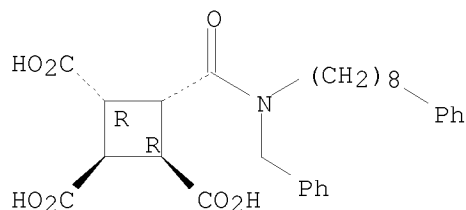
Relative stereochemistry.



RN 184228-48-6 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(phenylmethyl)(8-phenyloctyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

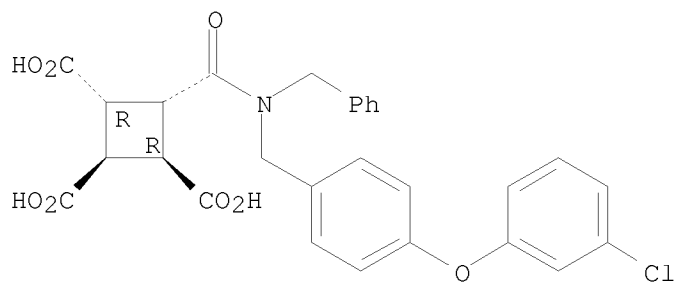
Relative stereochemistry.



RN 184228-54-4 CAPLUS

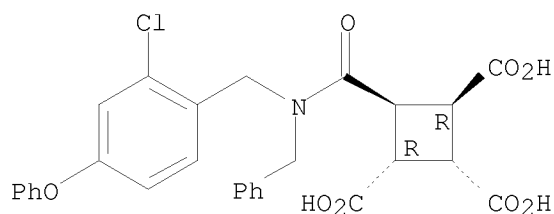
CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[[4-(3-chlorophenoxy)phenyl]methyl](phenylmethyl)amino]carbonyl]-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



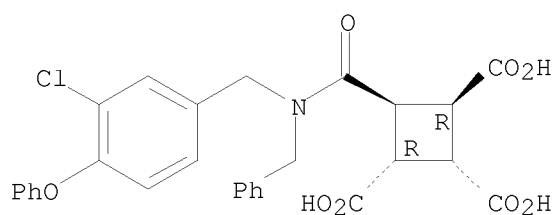
RN 184228-57-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(2-chloro-4-phenoxyphenyl)methyl] (phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



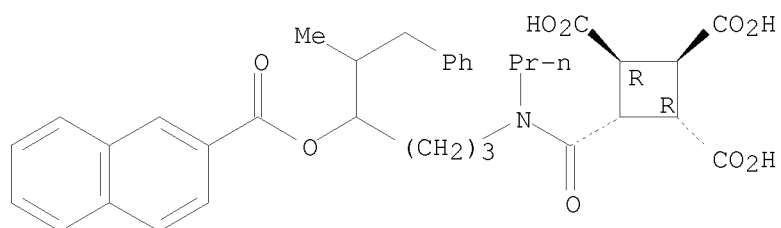
RN 184228-60-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(3-chloro-4-phenoxyphenyl)methyl] (phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



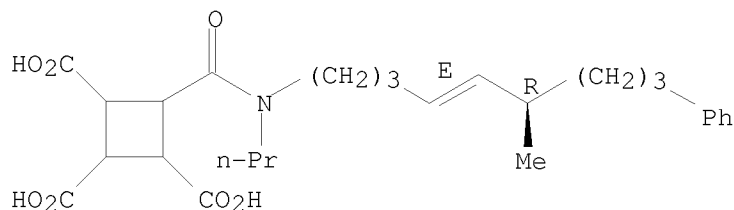
RN 184228-67-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[5-methyl-4-[(2-naphthalenylcarbonyl)oxy]-6-phenylhexyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-[partial]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



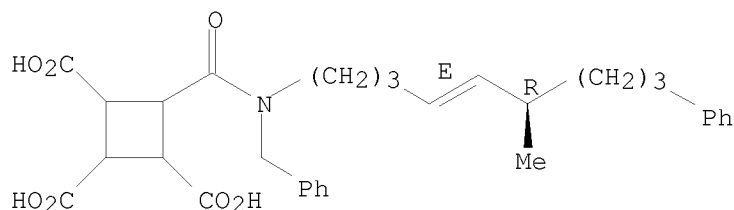
RN 184228-69-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(6-methyl-9-phenyl-4-nonenyl)propylamino]carbonyl]-,  
 (4E,6R)-[partial]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.



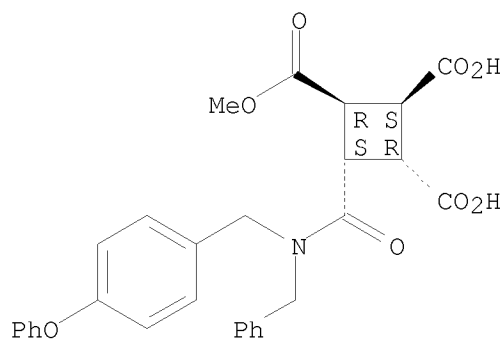
RN 184228-71-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(6-methyl-9-phenyl-4-nonenyl)(phenylmethyl)amino]carbonyl]-,  
 (4E,6R)-[partial]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.



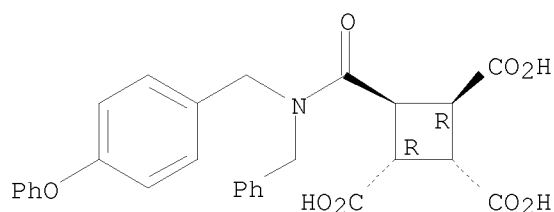
RN 184487-96-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1-methyl  
 ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



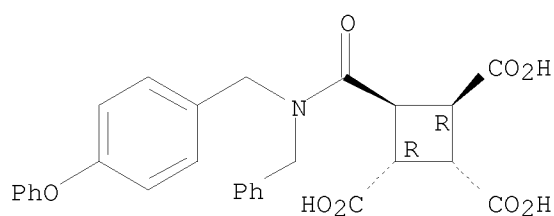
RN 184487-97-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(-)- (9CI) (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.



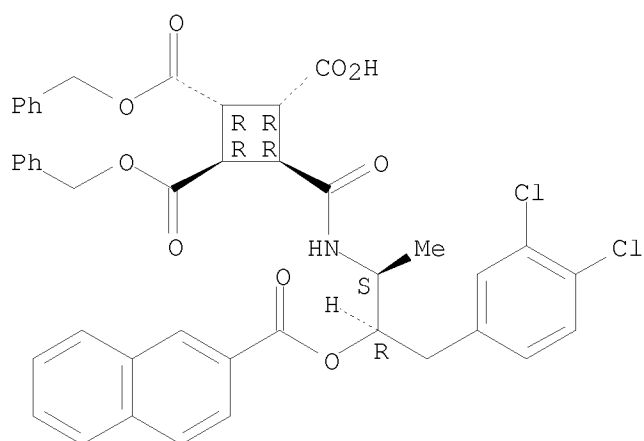
RN 184487-98-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(+)-(9CI) (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.



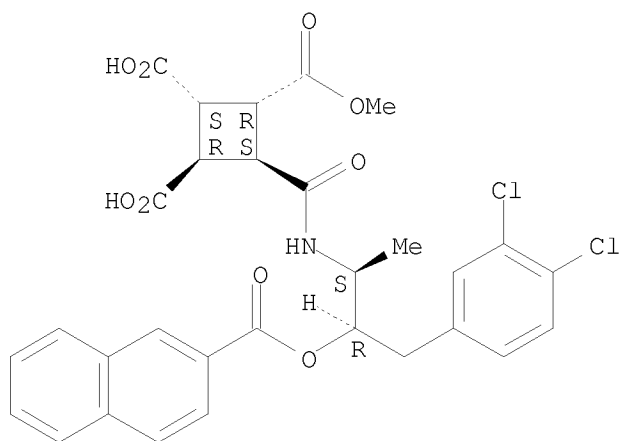
RN 184487-99-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1,2-bis(phenylmethyl)  
 ester, (1R,2R,3R,4R)-(CA INDEX NAME)

Absolute stereochemistry.



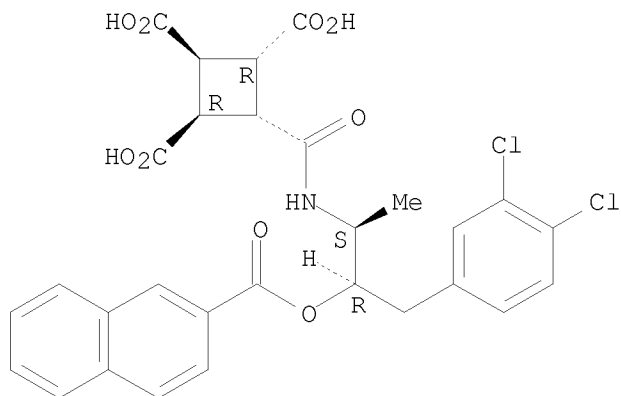
RN 184488-00-4 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1R,2S,3R,4S)-(CA INDEX NAME)

Absolute stereochemistry.



RN 184488-01-5 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-,  
 [1R-[1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ (1S\*,2R\*)]]- (9CI) (CA INDEX NAME)

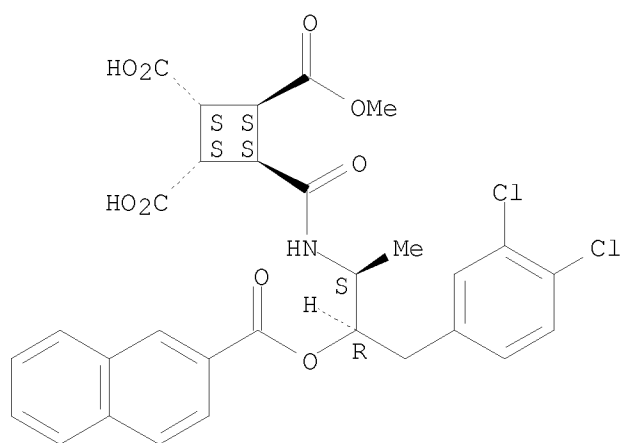
Absolute stereochemistry.



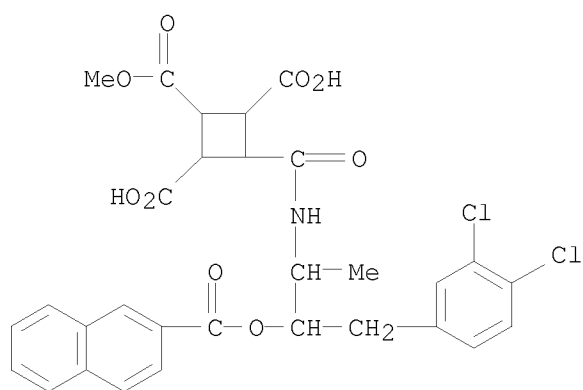
RN 184488-02-6 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1S,2S,3S,4S)- (CA INDEX NAME)

Absolute stereochemistry.



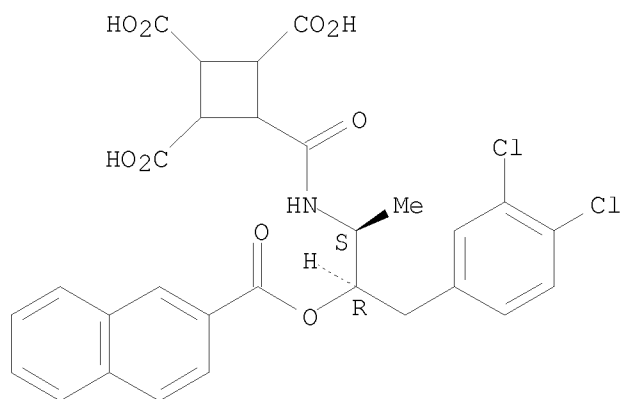


RN 184488-03-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 2-methyl ester,  
 stereoisomer (9CI) (CA INDEX NAME)



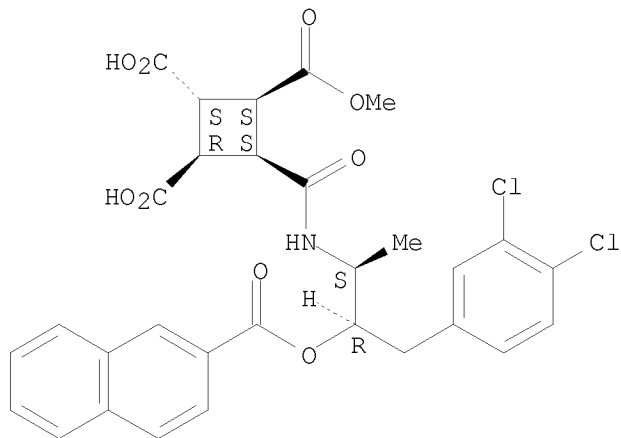
RN 184488-04-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, [4(1S,2R)]-[partial]-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.

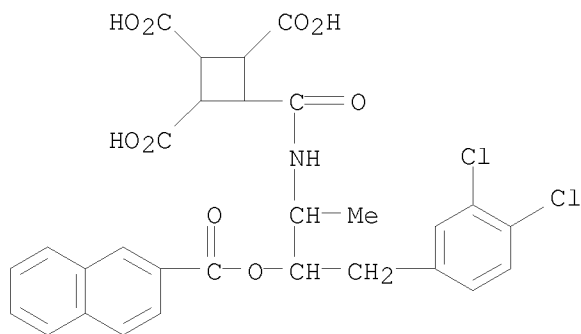


RN 184488-05-9 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 1-methyl ester,  
 (1S,2S,3R,4S)- (9CI) (CA INDEX NAME)

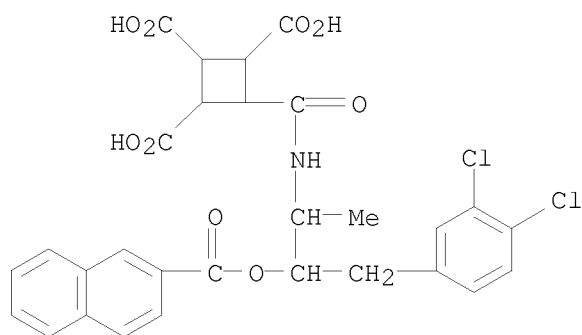
Absolute stereochemistry.



RN 184488-06-0 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, stereoisomer (9CI) (CA INDEX NAME)



RN 184488-07-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, stereoisomer (9CI) (CA INDEX NAME)



IT 38841-00-8

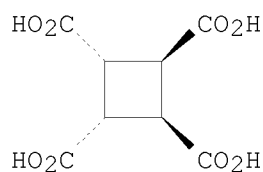
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of cyclobutane-derivative inhibitors of squalene synthase and protein farnesyl transferase)

RN 38841-00-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



IT 169943-15-1P 184228-80-6P 184228-81-7P

184228-82-8P 184228-88-4P 184228-89-5P

184229-04-7P 184229-11-6P 184229-12-7P

184229-13-8P 184229-17-2P 184488-11-7P

184488-12-8P

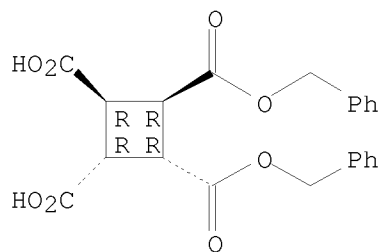
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of cyclobutane-derivative inhibitors of squalene synthase and protein farnesyl transferase)

RN 169943-15-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester,  
(1R,2R,3R,4R)-rel- (CA INDEX NAME)

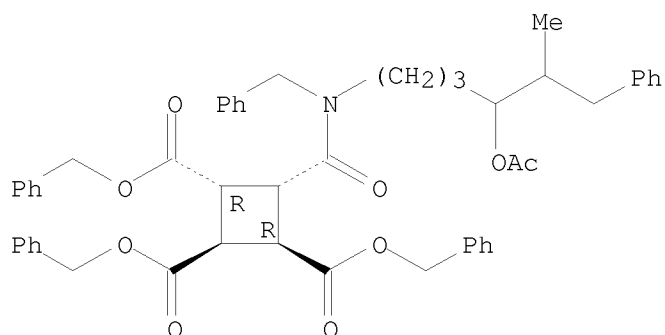
Relative stereochemistry.



RN 184228-80-6 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[4-(acetyloxy)-5-methyl-6-phenylhexyl] (phenylmethyl) amino] carbonyl]-,  
tris(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA  
INDEX NAME)

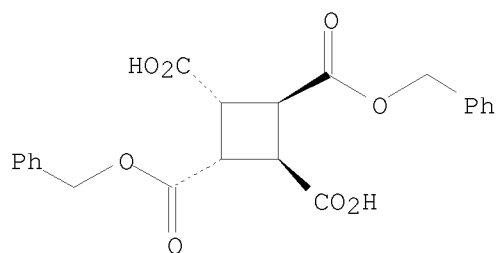
Relative stereochemistry.



RN 184228-81-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

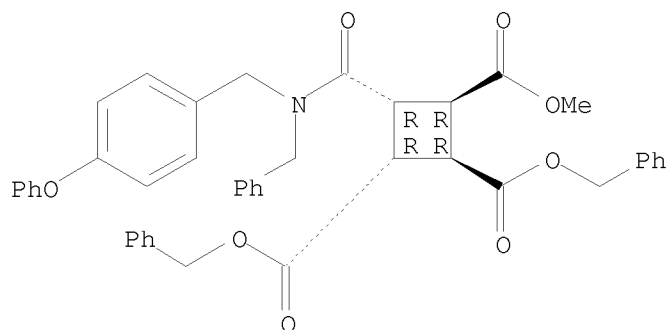
Relative stereochemistry.



RN 184228-82-8 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid, 4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, 1-methyl 2,3-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

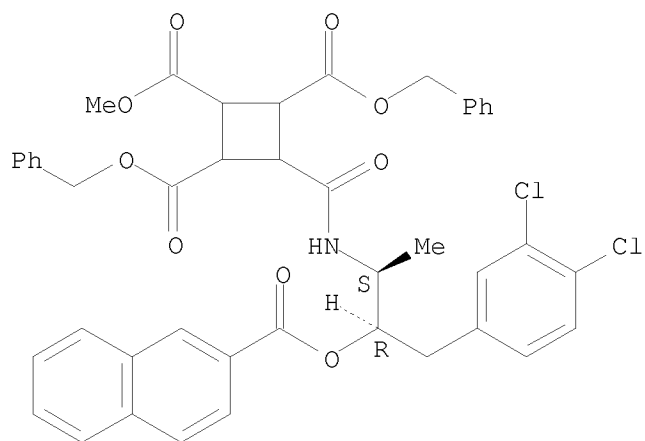
Relative stereochemistry.



RN 184228-88-4 CAPLUS

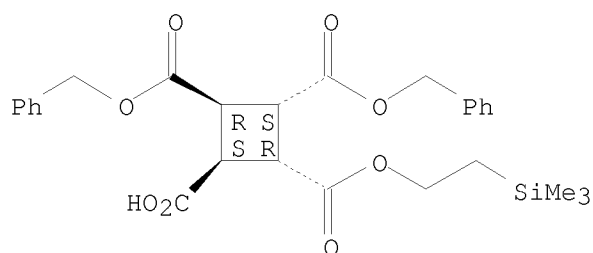
CN 1,2,3-Cyclobutanetricarboxylic acid, 4-[[[(1S,2R)-3-(3,4-dichlorophenyl)-1-methyl-2-[(2-naphthalenylcarbonyl)oxy]propyl]amino]carbonyl]-, 2-methyl 1,3-bis(phenylmethyl) ester (CA INDEX NAME)

Absolute stereochemistry.



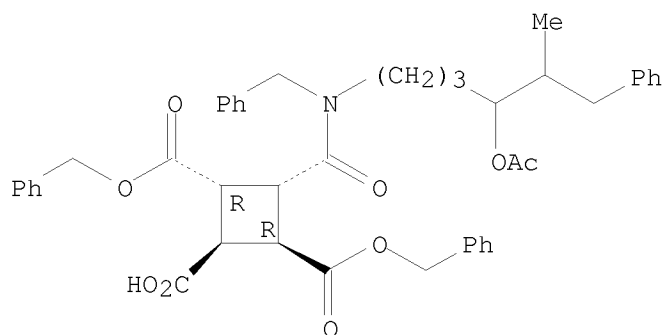
RN 184228-89-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl)  
 3-[2-(trimethylsilyl)ethyl] ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



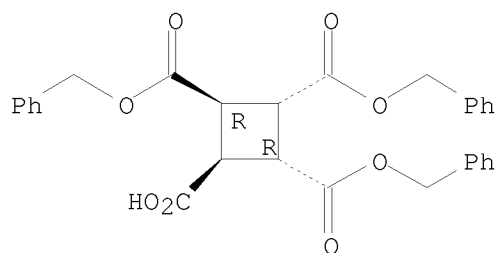
RN 184229-04-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[4-(acetyloxy)-5-methyl-6-phenylhexyl] (phenylmethyl) amino]carbonyl]-,  
 1,3-bis(phenylmethyl) ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-[partial]-  
 (9CI) (CA INDEX NAME)

Relative stereochemistry.



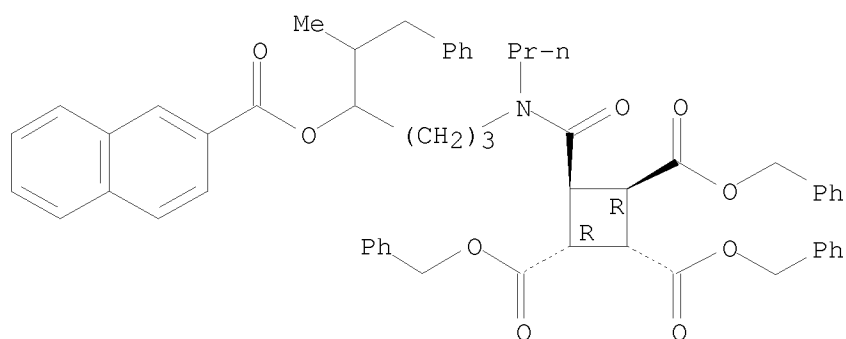
RN 184229-11-6 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tris(phenylmethyl) ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



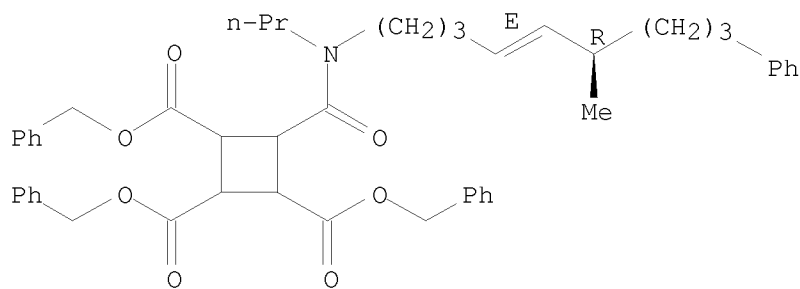
RN 184229-12-7 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[5-methyl-4-[(2-naphthalenylcarbonyl)oxy]-6-phenylhexyl]propylamino]carbonyl]-, tris(phenylmethyl) ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



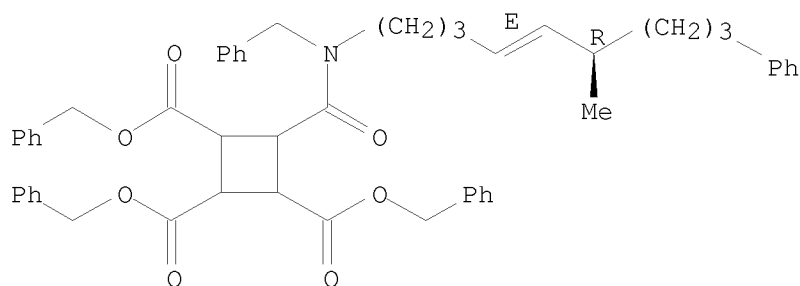
RN 184229-13-8 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[4E,6R]-6-methyl-9-phenyl-4-nonenyl]propylamino]carbonyl]-,  
 tris(phenylmethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.



RN 184229-17-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[4E,6R]-6-methyl-9-phenyl-4-nonenyl]propylamino]carbonyl]-,  
 tris(phenylmethyl) ester (9CI) (CA INDEX NAME)

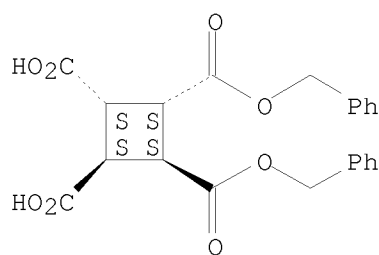
Absolute stereochemistry.  
 Double bond geometry as shown.



RN 184488-11-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester,  
(1R,2R,3R,4R)-rel-(+)- (CA INDEX NAME)

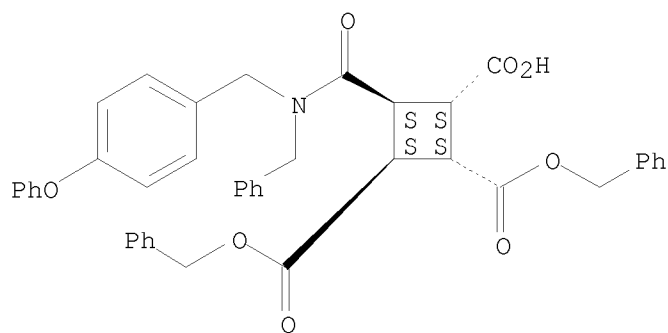
Rotation (+). Absolute stereochemistry unknown.



RN 184488-12-8 CAPLUS

CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-,  
1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel-(-)- (9CI) (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.



L4 ANSWER 67 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:543081 CAPLUS

DOCUMENT NUMBER: 125:170751

ORIGINAL REFERENCE NO.: 125:31947a,31950a

TITLE: Formation of cyclic anhydride intermediates and  
esterification of cotton cellulose by multifunctional  
carboxylic acids: an infrared spectroscopy study

AUTHOR(S): Yang, Charles Q.; Wang, Xilie

CORPORATE SOURCE: Dep. Textiles, Univ. Georgia, Athens, GA, 30602, USA

SOURCE: Textile Research Journal (1996), 66(9), 595-603

CODEN: TRJOA9; ISSN: 0040-5175

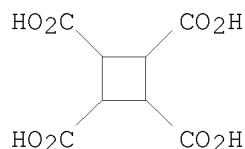
PUBLISHER: Textile Research Institute

DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Multifunctional polycarboxylic acids were used as nonformaldehyde crosslinking agents for cotton fabrics to replace the traditional N-methylol reagents. Esterification of cotton cellulose by 17 aliphatic and aromatic polycarboxylic acids is studied using Fourier transform IR spectroscopy. Five-membered cyclic anhydride intermediates formed under the curing conditions are identified on cotton fabrics treated with these acids. Only those polycarboxylic acids that form cyclic anhydride intermediates esterify cotton cellulose. Formation of the cyclic anhydride intermediates and esterification of cotton cellulose take place in the same curing temperature regions. The IR spectroscopy data also indicate that the second carboxyl group in a bifunctional carboxylic acid is not able to esterify cotton cellulose effectively. Therefore, we can conclude that a polycarboxylic acid esterifies cotton cellulose through the formation of a cyclic anhydride intermediate. The IR spectroscopy data also reveal that 1,2,3,4-butanetetracarboxylic acid is the most effective crosslinking agent for cotton cellulose among the acids studied.

IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: TEM (Technical or engineered material use); USES (Uses)  
(IR spectroscopic study of formation of cyclic anhydride intermediates and esterification of cotton cellulose by multifunctional carboxylic acids)

RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 68 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1996:171904 CAPLUS  
DOCUMENT NUMBER: 124:215911  
ORIGINAL REFERENCE NO.: 124:39633a,39636a  
TITLE: Toner for developing electrostatic images and processes for preparing the same  
INVENTOR(S): Nakadera, Kazue; Okutani, Haruo; Kurebayashi, Hideki  
PATENT ASSIGNEE(S): Tomoegawa Paper Co. Ltd., Japan  
SOURCE: Brit. UK Pat. Appl., 55 pp.  
CODEN: BAXXDU  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
GB 2289950	A	19951206	GB 1995-11349	19950605
GB 2289950	B	19980311		
JP 07333891	A	19951222	JP 1994-145290	19940603
JP 3356548	B2	20021216		
JP 07333892	A	19951222	JP 1994-145291	19940603
JP 3326279	B2	20020917		
FR 2720843	A1	19951208	FR 1995-6577	19950602
FR 2720843	B1	19970523		
US 5587265	A	19961224	US 1995-463502	19950605
DE 19520580	A1	19951214	DE 1995-19520580	19950606
US 5738965	A	19980414	US 1996-734918	19961022



PRIORITY APPLN. INFO.:

JP 1994-145290 A 19940603  
 JP 1994-145291 A 19940603  
 US 1995-463502 A1 19950605

AB A toner for developing an electrostatic image, comprising a colorant and a polyester resin, which contains a polymer prepared by reacting a polyester oligomer and one or more long chain alcs. and/or long chain carboxylic acids having 12 or more carbon atoms. The polyester is prepared by a two stage process firstly (i) either (a) reacting a polyhydric alc. with a polybasic acid which is aromatic or aliphatic with 11 C atoms or less or (b) reacting a polybasic acid with a polyhydric alc. which is aromatic or aliphatic with 11 C atoms or less thus forming an oligomer (a) or (b) and (ii) either reacting oligomer (a) with a carboxylic acid with 12 or more C atoms or reacting oligomer (b) with an alc. with 12 or more C atoms to form a first polymer and a second polymer formed directly from the oligomer.

IT 174572-31-7P 174572-33-9P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation and use in electrostatog. toners)

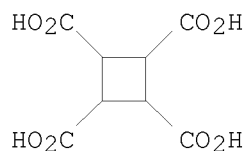
RN 174572-31-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with  
 1,3-benzenedicarboxylic acid, 1,3-isobenzofurandione and  
 $\alpha, \alpha'$  - [(1-methylethylidene)di-4,1-phenylene]bis[ $\omega$ -  
 hydroxypoly(oxy-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 53159-92-5

CMF C8 H8 O8

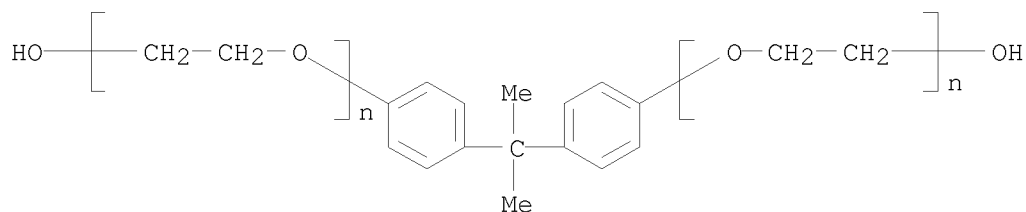


CM 2

CRN 32492-61-8

CMF (C2 H4 O)<sub>n</sub> (C2 H4 O)<sub>n</sub> C15 H16 O2

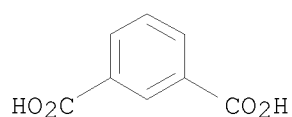
CCI PMS



CM 3

CRN 121-91-5

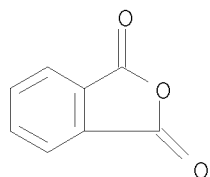
CMF C8 H6 O4



CM 4

CRN 85-44-9

CMF C8 H4 O3



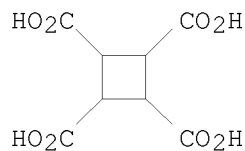
RN 174572-33-9 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 1,3-isobenzofurandione and  $\alpha,\alpha'$ -[(1-methylethylidene)di-4,1-phenylene]bis[ $\omega$ -hydroxypoly(oxy-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

CM 1

CRN 53159-92-5

CMF C8 H8 O8

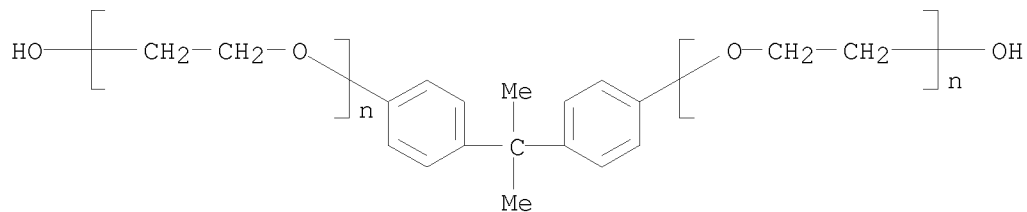


CM 2

CRN 32492-61-8

CMF (C2 H4 O)n (C2 H4 O)n C15 H16 O2

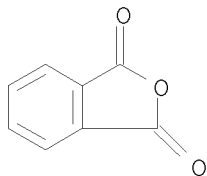
CCI PMS



CM 3

CRN 85-44-9

CMF C8 H4 O3



L4 ANSWER 69 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:38922 CAPLUS

DOCUMENT NUMBER: 124:189651

ORIGINAL REFERENCE NO.: 124:34843a, 34846a

TITLE: Liquid crystal orientation agent

INVENTOR(S): Kawamura, Shigeo; Myamoto, Takeshi; Nishikawa, Michinori; Tsuda, Hirosuke; Betsusho, Nobuo

PATENT ASSIGNEE(S): Japan Synthetic Rubber Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

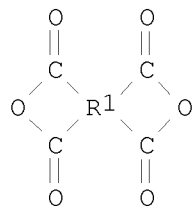
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

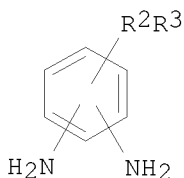
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

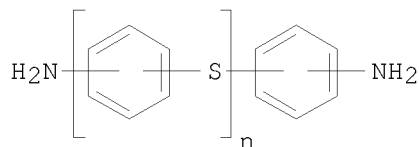
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07270804	A	19951020	JP 1994-64918	19940401
PRIORITY APPLN. INFO.: GI			JP 1994-64918	19940401



I



II



III

AB The agent contains a (imidated) polymer product obtained by reaction of (a) tetracarboxylic acid dianhydride I (R1 = tetravalent organic group) and (b) a diamine mixture containing ≤80 mol% of monosubstituted phenylenediamine II (R2 = O, CO2, OCO, NHCO, CONH, CO; R3 = monovalent organic group) and ≥5 mol% of sulfide bond-containing diamine III (n ≥1). The agent provides a liquid crystal-orientation film with high pretilt angle useful for various optical imaging device.

IT 173982-02-0 173982-06-4 173982-07-5

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(liquid crystal orientation agent with polyamic acid or polyimide)

RN 173982-02-0 CAPLUS

CN Cholest-5-en-3-ol (3β)-, 3,5-diaminobenzoate, polymer with 1,2,3,4-cyclobutanetetracarboxylic acid and 4,4'-thiobis[benzenamine]

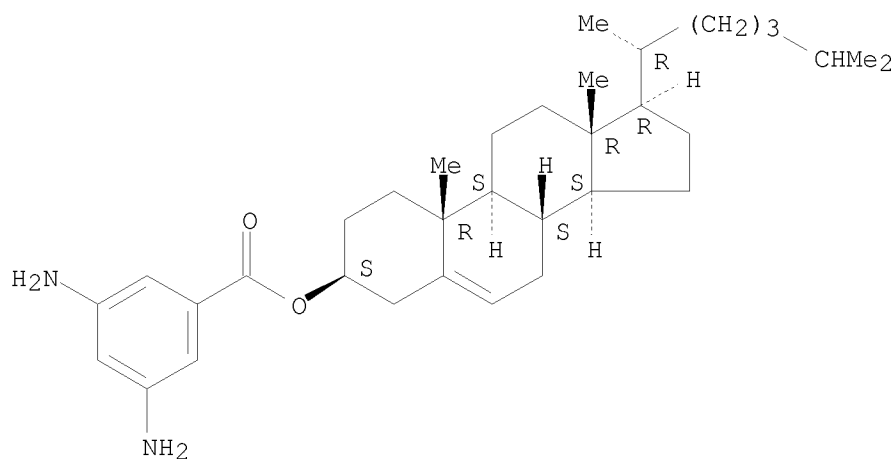
(9CI) (CA INDEX NAME)

CM 1

CRN 173027-19-5

CMF C34 H52 N2 O2

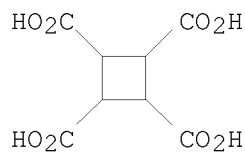
Absolute stereochemistry.



CM 2

CRN 53159-92-5

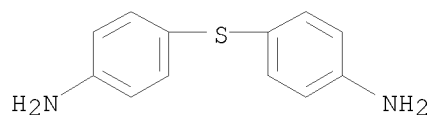
CMF C8 H8 O8



CM 3

CRN 139-65-1

CMF C12 H12 N2 S



RN 173982-06-4 CAPLUS

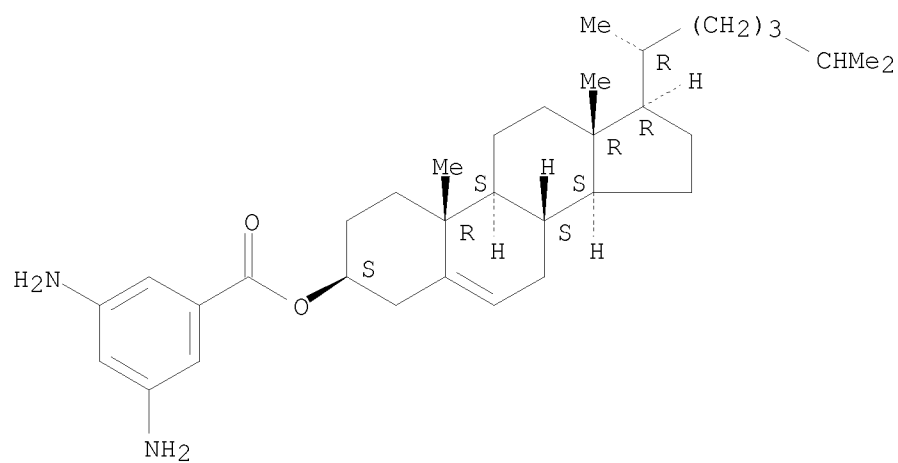
CN Cholest-5-en-3-ol (3 $\beta$ )-, 3,5-diaminobenzoate, polymer with 1,4-benzenediamine, 1,2,3,4-cyclobutanetetracarboxylic acid and 4,4'-thiobis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 173027-19-5

CMF C34 H52 N2 O2

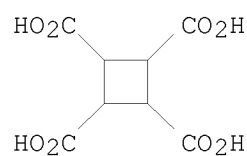
Absolute stereochemistry.



CM 2

CRN 53159-92-5

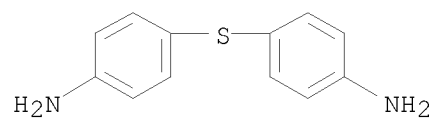
CMF C8 H8 O8



CM 3

CRN 139-65-1

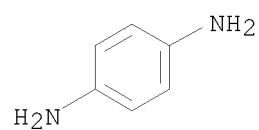
CMF C12 H12 N2 S



CM 4

CRN 106-50-3

CMF C6 H8 N2



RN 173982-07-5 CAPLUS

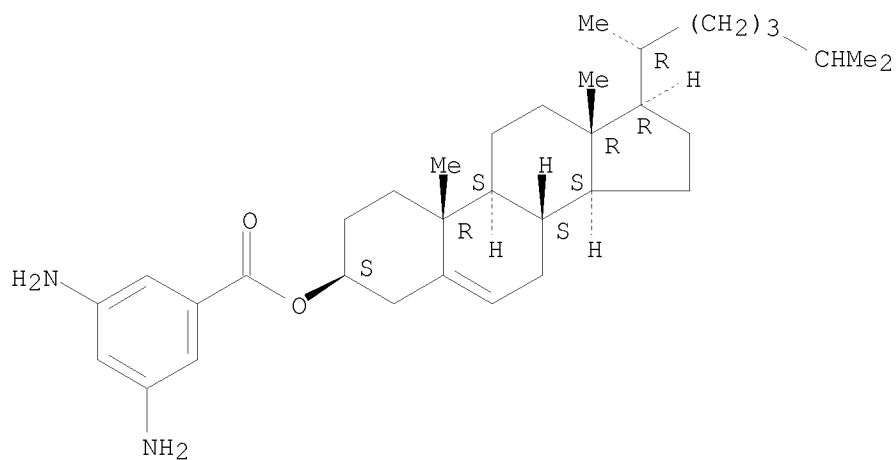
CN Cholest-5-en-3-ol (3β)-, 3,5-diaminobenzoate, polymer with

1,4-benzenediamine, 1,2,3,4-cyclobutanetetracarboxylic acid,  
1-hexadecanamine and 4,4'-thiobis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

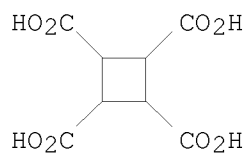
CRN 173027-19-5  
CMF C34 H52 N2 O2

Absolute stereochemistry.



CM 2

CRN 53159-92-5  
CMF C8 H8 O8



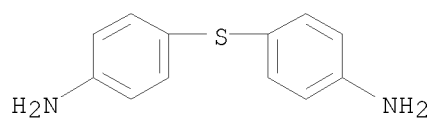
CM 3

CRN 143-27-1  
CMF C16 H35 N

H<sub>2</sub>N- (CH<sub>2</sub>)<sub>15</sub>-Me

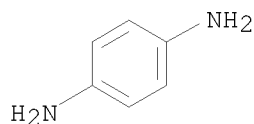
CM 4

CRN 139-65-1  
CMF C12 H12 N2 S



CM 5

CRN 106-50-3  
CMF C6 H8 N2



L4 ANSWER 70 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:978682 CAPLUS

DOCUMENT NUMBER: 124:29303

ORIGINAL REFERENCE NO.: 124:5623a,5626a

TITLE: Cyclobutane derivatives and their use as inhibitors of protein farnesyltransferase and squalene synthase

INVENTOR(S): Stein, Herman H.; Baker, William R.; Fung, Anthony K. L.; Rosenberg, Saul H.; Rockway, Todd W.; Fakhoury, Stephen A.; Garvey, David S.; Donner, B. Gregory; McClellan, William J.; et al.

PATENT ASSIGNEE(S): Abbott Laboratories, USA

SOURCE: PCT Int. Appl., 170 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

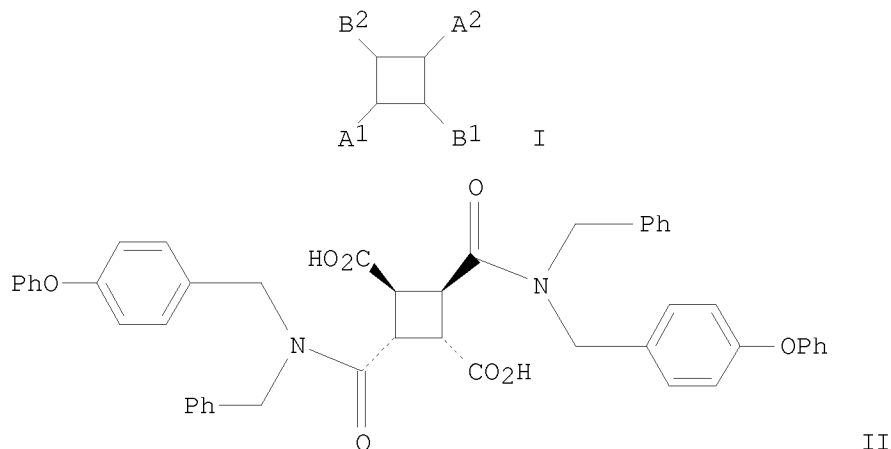
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9521815	A1	19950817	WO 1995-US1360	19950201
W: CA, JP, MX				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
PRIORITY APPLN. INFO.:			US 1994-194366	A 19940209
OTHER SOURCE(S):	MARPAT 124:29303			

GI



AB The invention provides compds. I [A1, A2 = CONR1R2, (CH2)nNR1R2, NHCONR1R2, CO2R4; R1 = H, alkyl, aryl, aralkyl, etc.; R2 = aryl, aralkyl,

alkenyl, etc.; R4 = aryl, aralkyl, etc.; B1, B2 = CH2OH, CH:NOH, WR5, CO2H and derivs., etc.; W = bond, alk(en)ylene, CONH, NHCONH; R5 = various (un)substituted heterocyclics, etc.] and their pharmaceutically acceptable salts. I inhibit protein farnesyltransferase and the farnesylation of the oncogene protein Ras, as well as de novo squalene production, resulting in the inhibition of cholesterol biosynthesis. For example, reaction of trans-1,2,3,4-cyclobutanetetracarboxylic acid dianhydride with 4-(PhO)C6H4CH2NHCH2Ph in THF gave, after chromatog. separation of isomers, title compound II in 32% yield. II gave 98% inhibition of rat brain protein farnesyltransferase in vitro at 10  $\mu$ M. Over 100 synthetic examples are given, plus data for inhibition of the title enzymes in vitro by selected compds.

IT 171483-72-0P 171483-73-1P 171483-74-2P

171483-75-3P 171483-76-4P 171483-77-5P

171483-78-6P 171483-79-7P

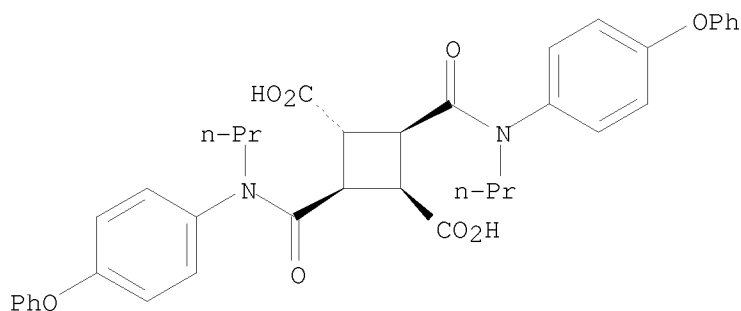
RL: BYP (Byproduct); PREP (Preparation)

(byproduct; preparation of cyclobutane derivs. as inhibitors of protein farnesyltransferase and squalene synthase)

RN 171483-72-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[4-phenoxyphenyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

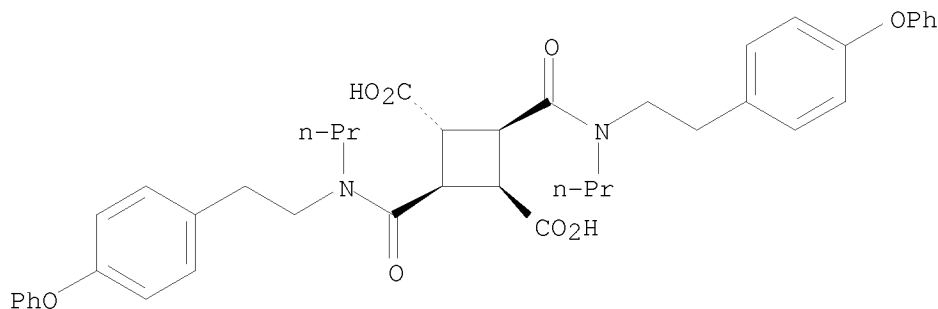
Relative stereochemistry.



RN 171483-73-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

Relative stereochemistry.

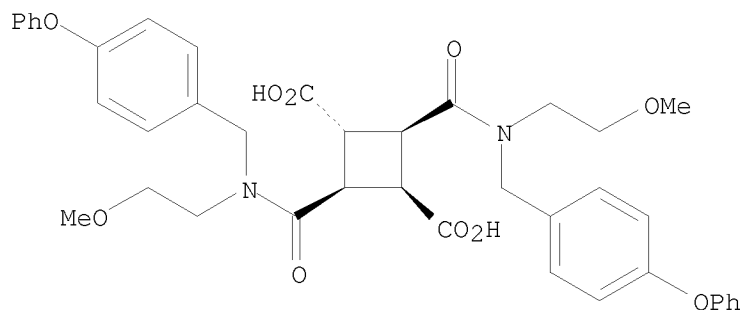


RN 171483-74-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-methoxyethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ )-(CA INDEX NAME)



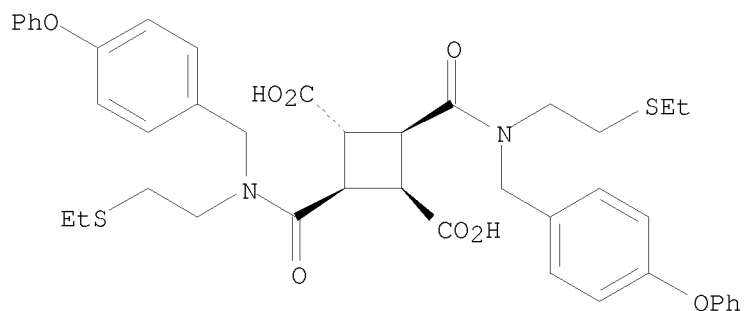
Relative stereochemistry.



RN 171483-75-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-(ethylthio)ethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

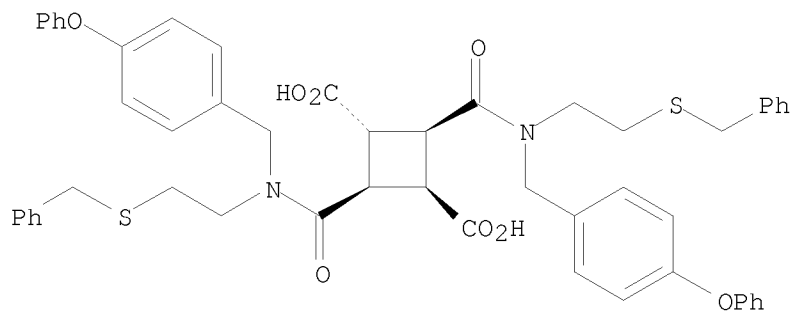
Relative stereochemistry.



RN 171483-76-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl][2-[(phenylmethyl)thio]ethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

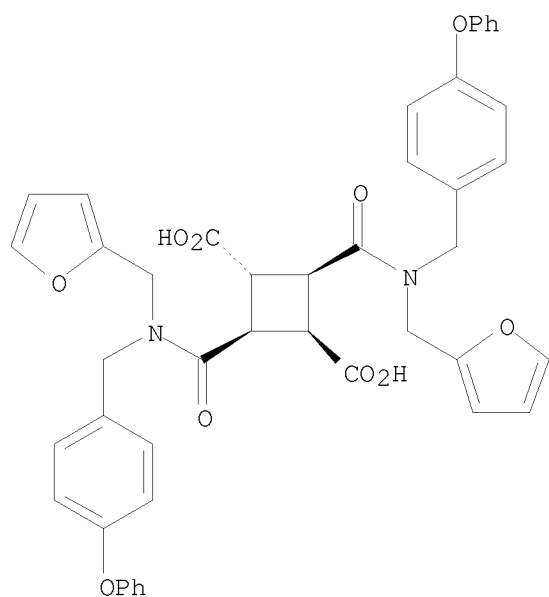
Relative stereochemistry.



RN 171483-77-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-furanylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

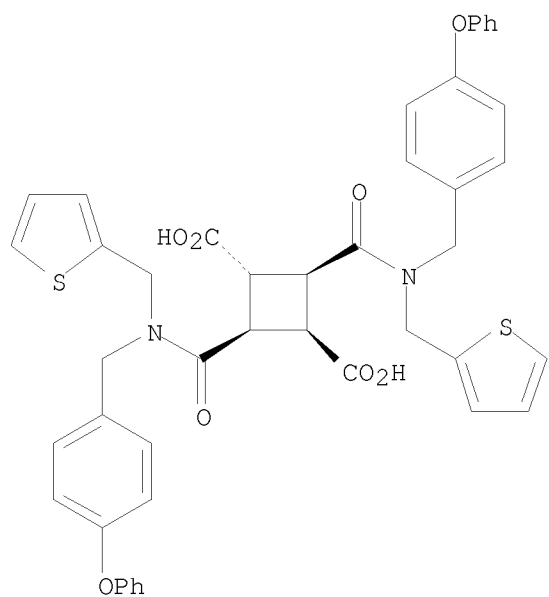
Relative stereochemistry.



RN 171483-78-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

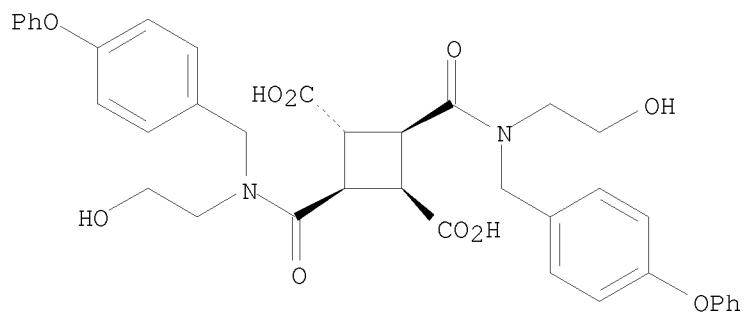
Relative stereochemistry.



RN 171483-79-7 CAPLUS

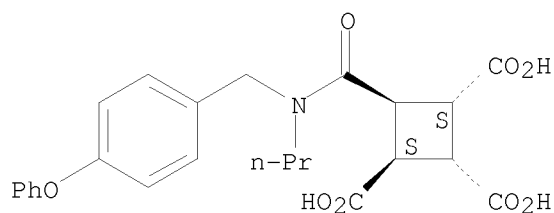
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-hydroxyethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

Relative stereochemistry.



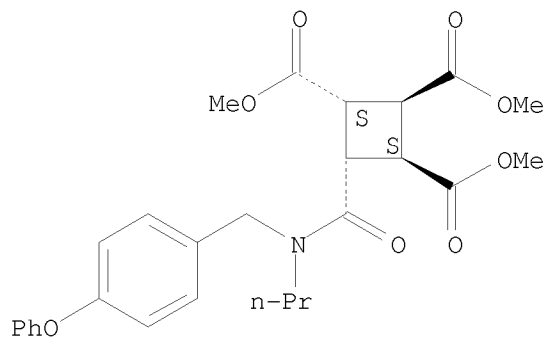
IT 169942-84-1P 169942-85-2P 171349-59-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (intermediate; preparation of cyclobutane derivs. as inhibitors of protein  
 farnesyltransferase and squalene synthase)  
 RN 169942-84-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



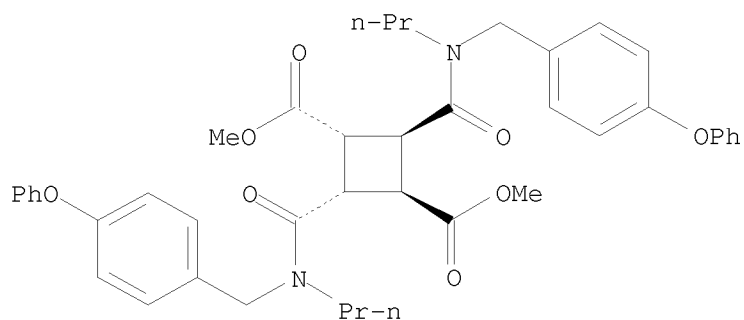
RN 169942-85-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, trimethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



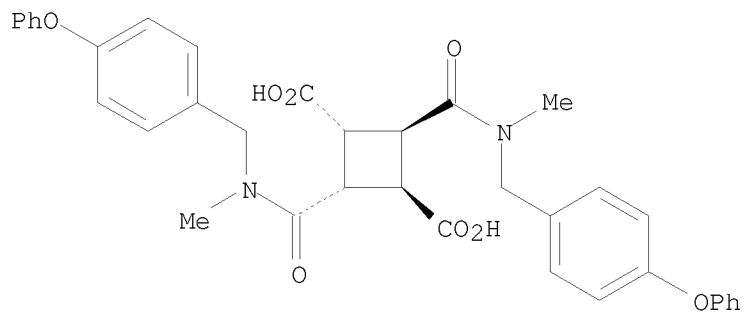
RN 171349-59-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-  
 phenoxyphenyl)methyl]propylamino]carbonyl]-, dimethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



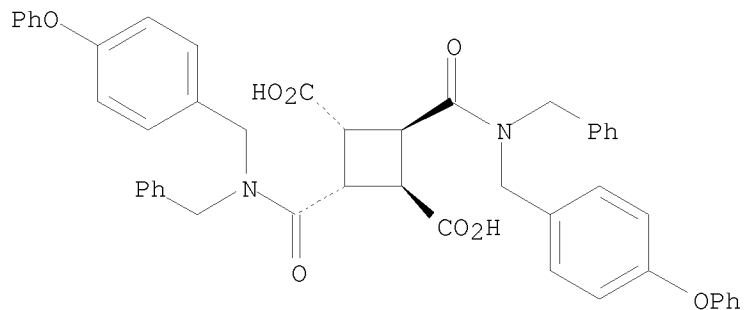
IT 171348-74-6P 171348-76-8P 171348-78-0P  
 171349-05-6P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of cyclobutane derivs. as inhibitors of protein farnesyltransferase and squalene synthase)  
 RN 171348-74-6 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171348-76-8 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

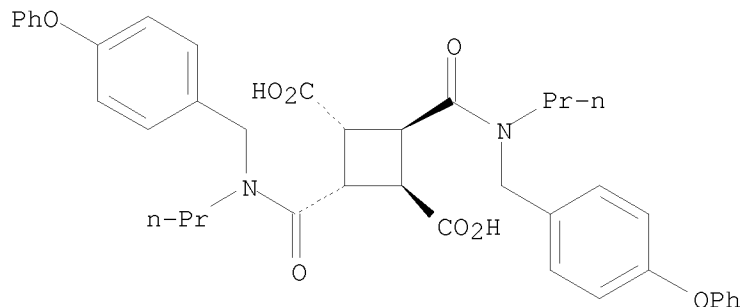
Relative stereochemistry.



RN 171348-78-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-

phenoxyphenyl)methyl]propylamino]carbonyl]-,  
(1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

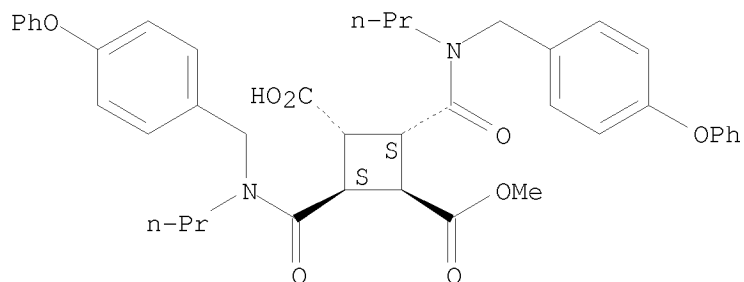
Relative stereochemistry.



RN 171349-05-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester,  
(1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT 171348-75-7P 171348-77-9P 171348-79-1P  
171348-80-4P 171348-81-5P 171348-82-6P  
171348-83-7P 171348-84-8P 171348-85-9P  
171348-86-0P 171348-87-1P 171348-88-2P  
171348-89-3P 171348-90-6P 171348-91-7P  
171348-92-8P 171348-93-9P 171348-94-0P  
171348-95-1P 171348-96-2P 171348-97-3P  
171348-98-4P 171348-99-5P 171349-00-1P  
171349-01-2P 171349-02-3P 171349-03-4P  
171349-04-5P 171349-06-7P 171349-09-0P  
171349-10-3P 171349-11-4P 171349-12-5P  
171349-13-6P 171349-14-7P 171349-15-8P  
171349-16-9P 171349-17-0P 171349-18-1P  
171349-19-2P 171349-20-5P 171349-21-6P  
171349-22-7P 171349-23-8P 171349-24-9P  
171349-25-0P 171349-26-1P 171349-27-2P  
171349-28-3P 171349-29-4P 171349-30-7P  
171349-31-8P 171349-32-9P 171349-33-0P  
171349-34-1P 171349-35-2P 171349-36-3P  
171349-37-4P 171349-39-6P 171349-40-9P  
171349-41-0P 171349-42-1P 171349-43-2P  
171349-44-3P 171349-45-4P 171349-47-6P  
171349-48-7P 171349-49-8P 171349-50-1P  
171349-51-2P 171349-52-3P 171349-53-4P  
171349-54-5P 171349-55-6P 171349-56-7P  
171349-57-8P 171349-58-9P 171483-63-9P

171483-64-0P 171483-65-1P 171483-66-2P

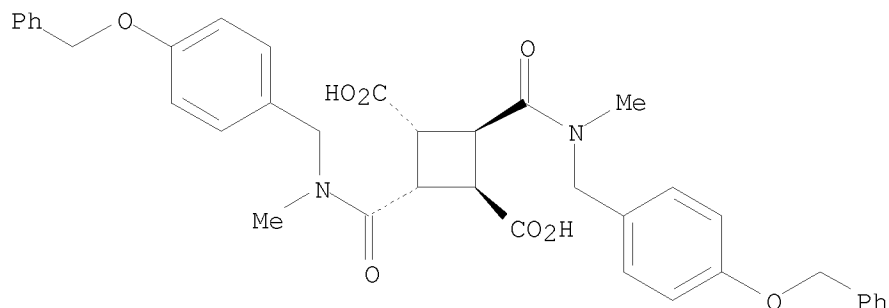
171483-67-3P 171483-68-4P 171483-69-5P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of cyclobutane derivs. as inhibitors of protein farnesyltransferase and squalene synthase)

RN 171348-75-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[[4-(phenylmethoxy)phenyl]methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

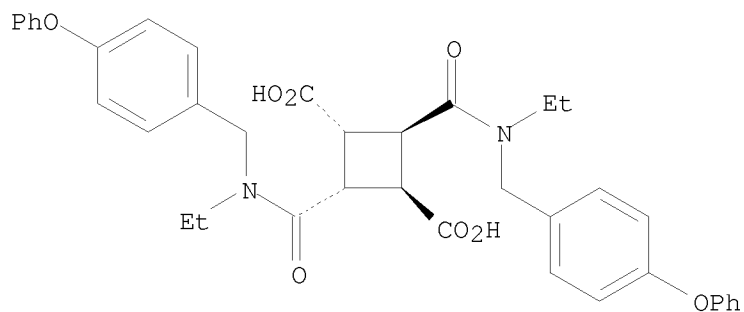
Relative stereochemistry.



RN 171348-77-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ethyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

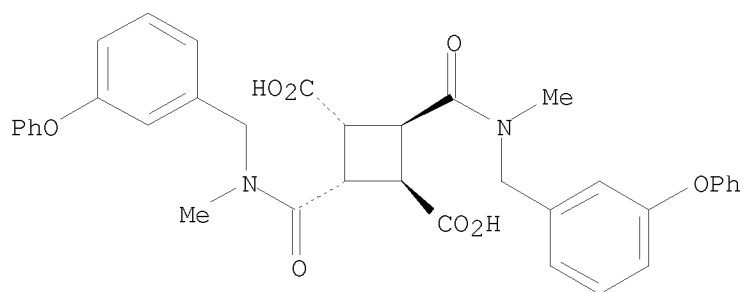
Relative stereochemistry.



RN 171348-79-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[(3-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

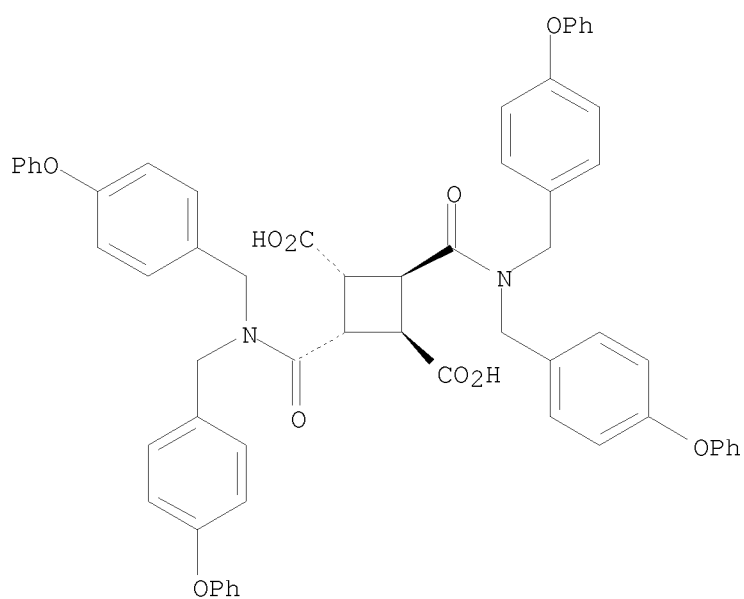
Relative stereochemistry.



RN 171348-80-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

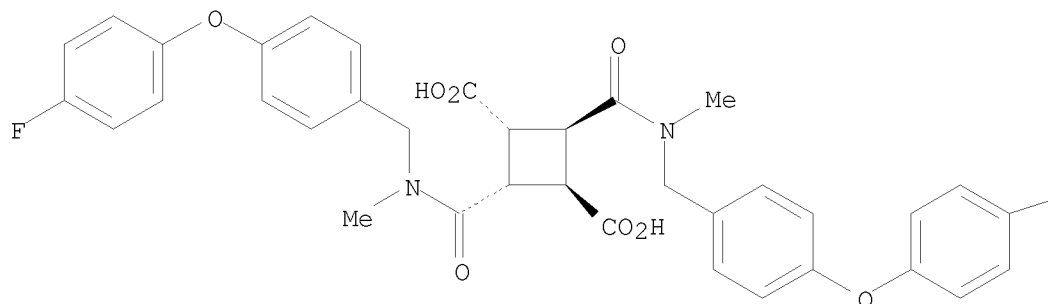
Relative stereochemistry.



RN 171348-81-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



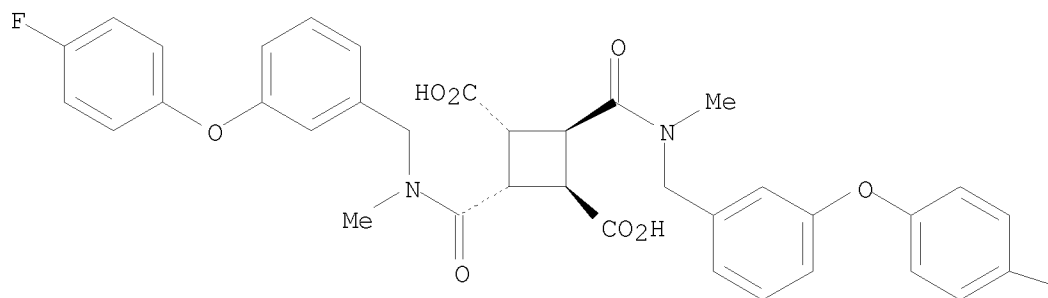
— F

RN 171348-82-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[3-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

PAGE 1-A



PAGE 1-B

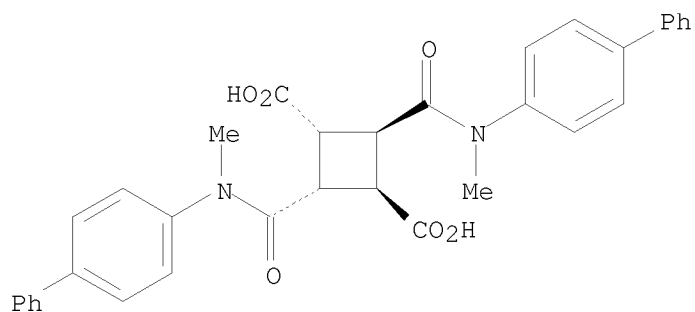
— F

RN 171348-83-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[([1,1'-biphenyl]-4-ylmethylamino)carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

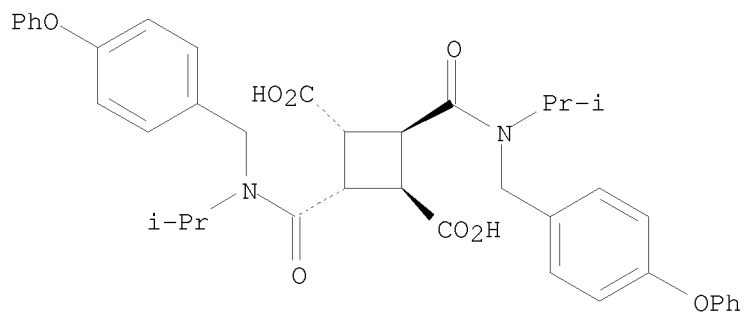




RN 171348-84-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(1-methylethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

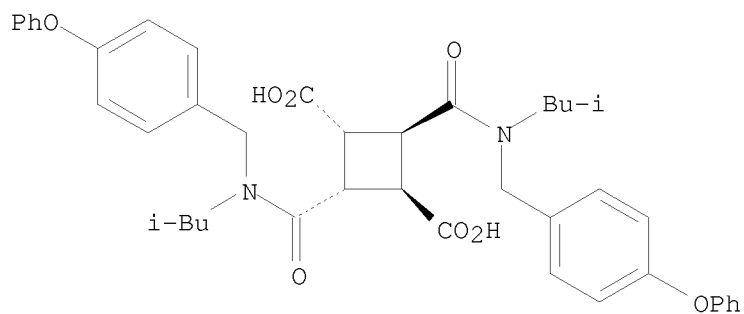
Relative stereochemistry.



RN 171348-85-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-methylpropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

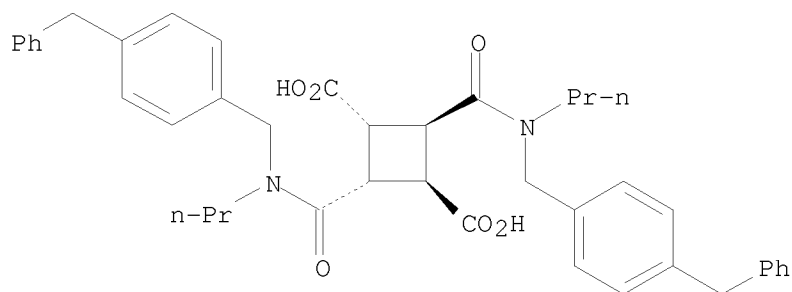
Relative stereochemistry.



RN 171348-86-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylmethyl)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

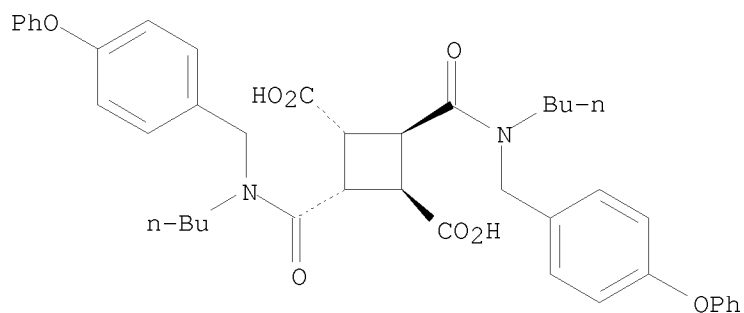
Relative stereochemistry.



RN 171348-87-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

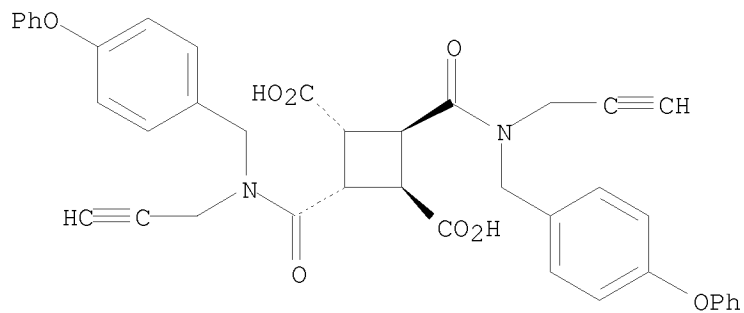
Relative stereochemistry.



RN 171348-88-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-phenoxyphenyl)methyl]-2-propynylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

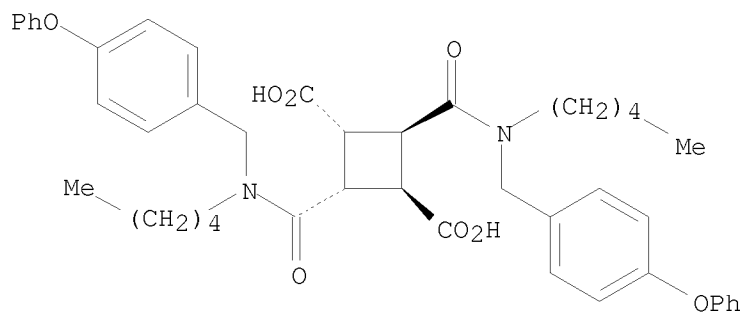
Relative stereochemistry.



RN 171348-89-3 CAPLUS

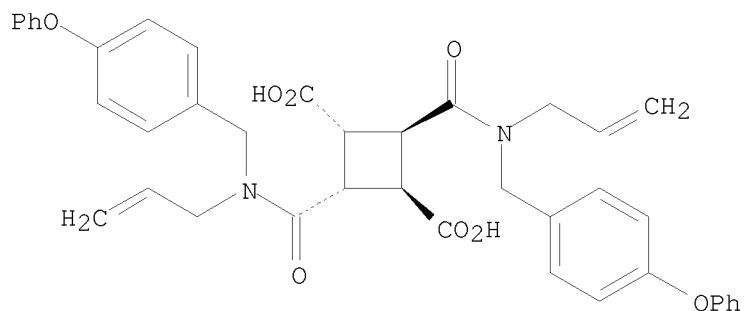
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[pentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



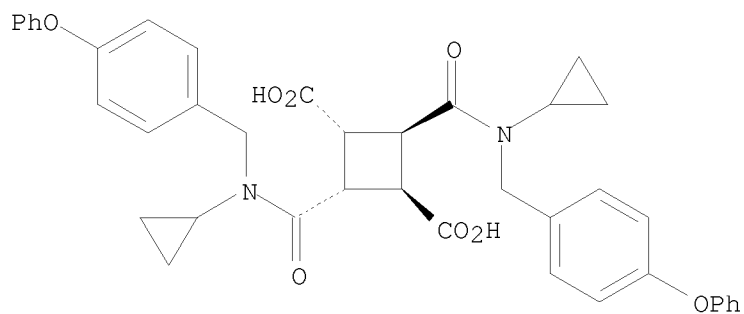
RN 171348-90-6 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl]-2-propen-1-ylamino]carbonyl-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



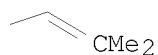
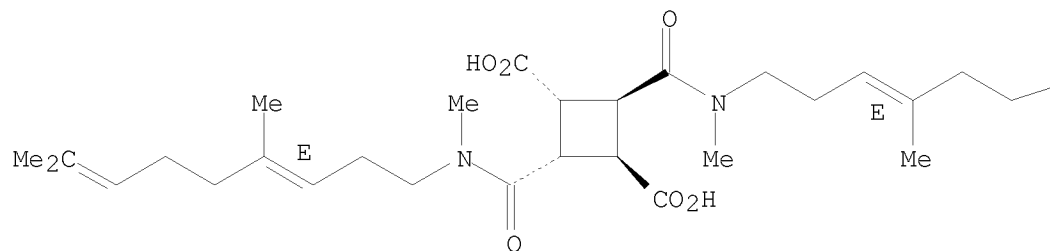
RN 171348-91-7 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclopropyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



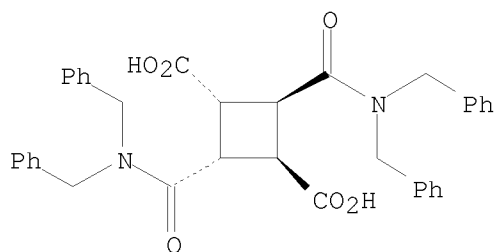
RN 171348-92-8 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclopropyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
 Double bond geometry as shown.



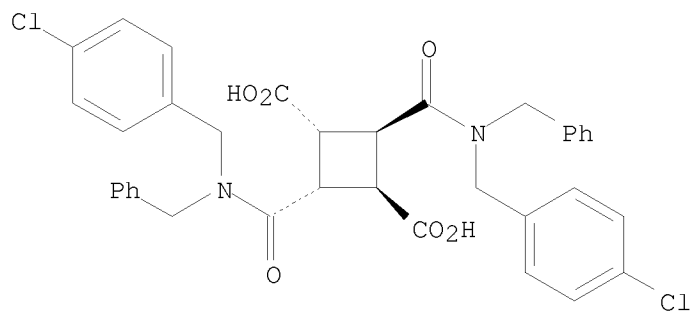
RN 171348-93-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[bis(phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



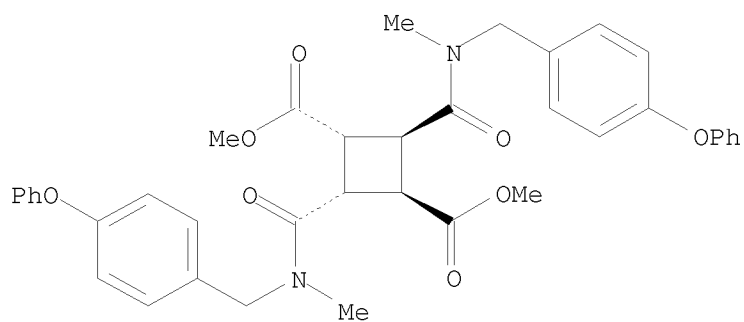
RN 171348-94-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-chlorophenyl)methyl](phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



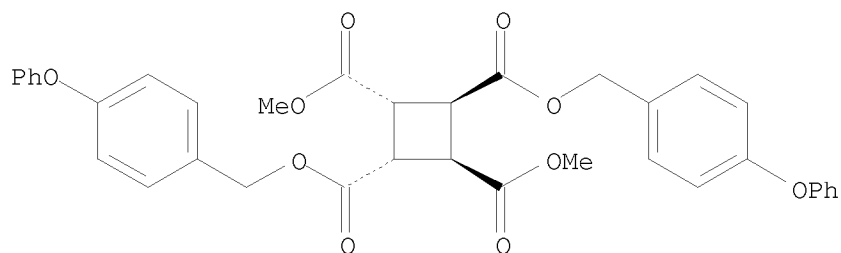
RN 171348-95-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, dimethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



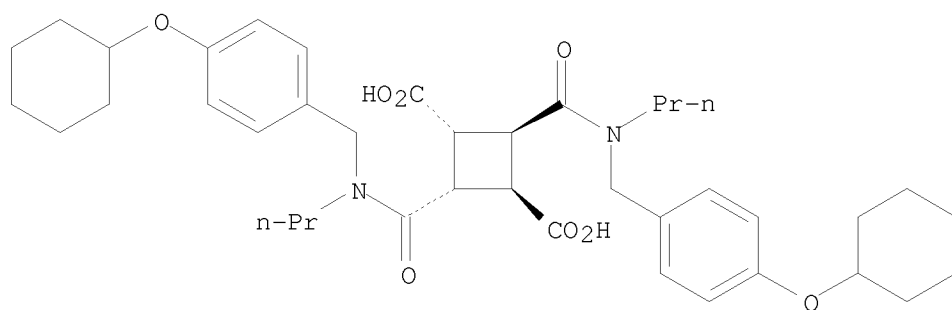
RN 171348-96-2 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl  
 2,4-bis[(4-phenoxyphenyl)methyl] ester,  
 (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



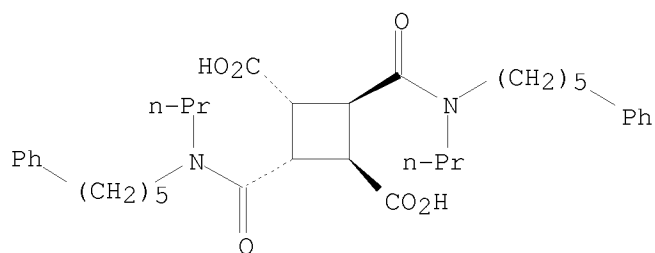
RN 171348-97-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(  
 cyclohexyloxy)phenyl]methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171348-98-4 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[5-  
 phenylpentyl]propylamino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )-  
 (9CI) (CA INDEX NAME)

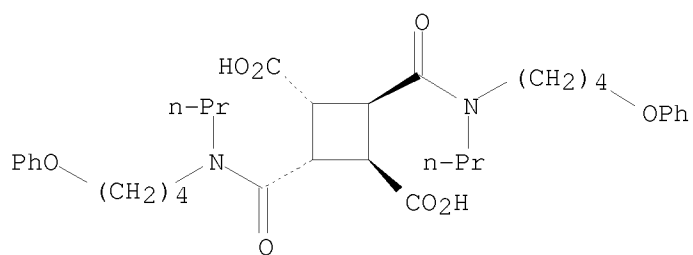
Relative stereochemistry.



RN 171348-99-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (4-phenoxybutyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

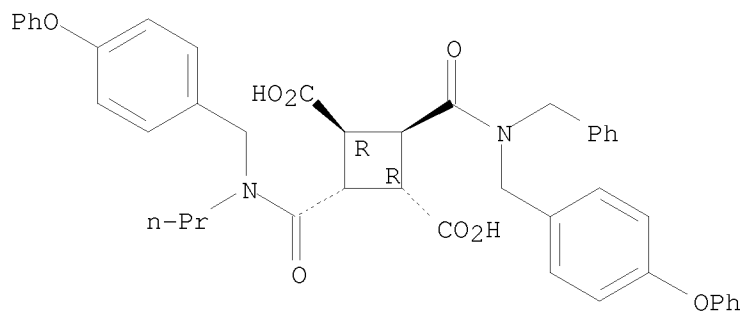
Relative stereochemistry.



RN 171349-00-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

Relative stereochemistry.

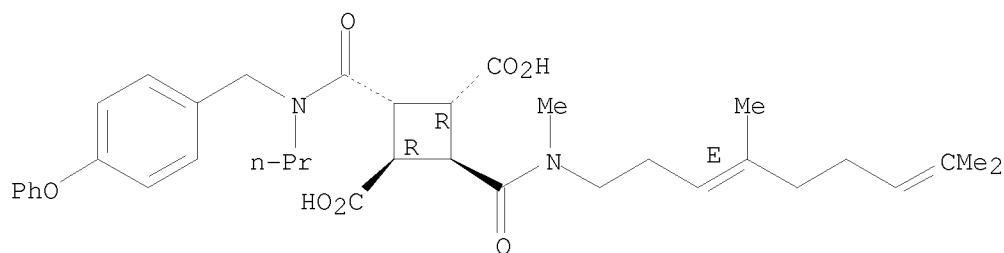


RN 171349-01-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2-[[[(4,8-dimethyl-3,7-nonadienyl)methylamino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, stereoisomer (9CI) (CA INDEX NAME)

Relative stereochemistry.

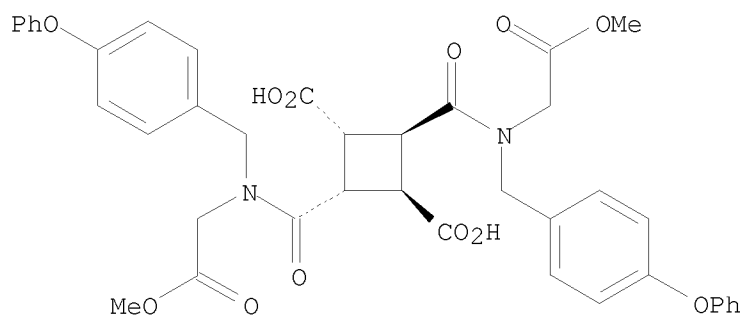
Double bond geometry as shown.



RN 171349-02-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (2-methoxy-2-oxoethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

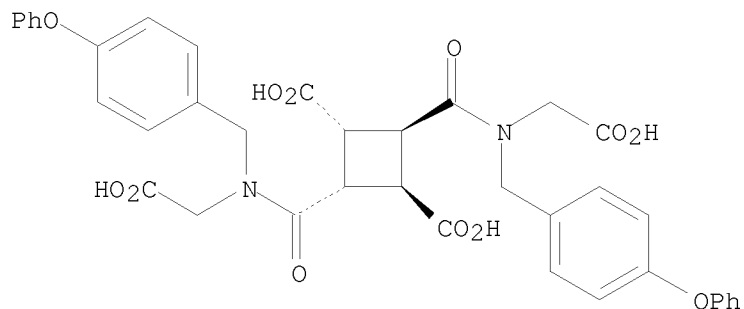
Relative stereochemistry.



RN 171349-03-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (carboxymethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

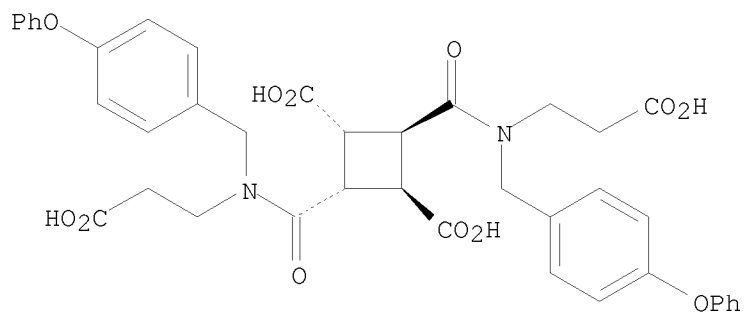
Relative stereochemistry.



RN 171349-04-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (2-carboxyethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

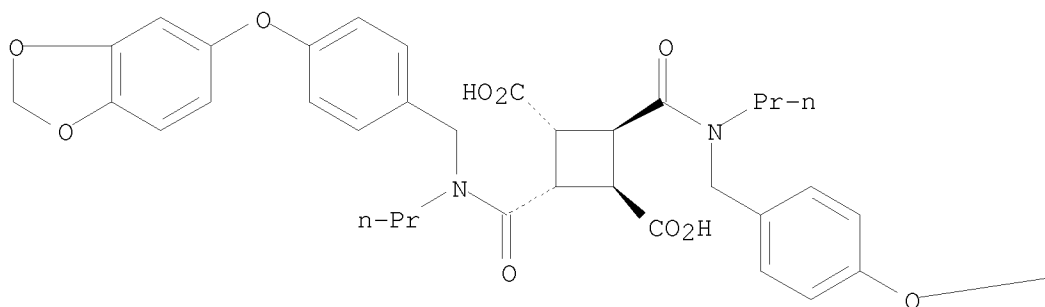
Relative stereochemistry.



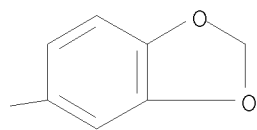
RN 171349-06-7 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(1,3-benzodioxol-5-yloxy)phenyl]methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

PAGE 1-A



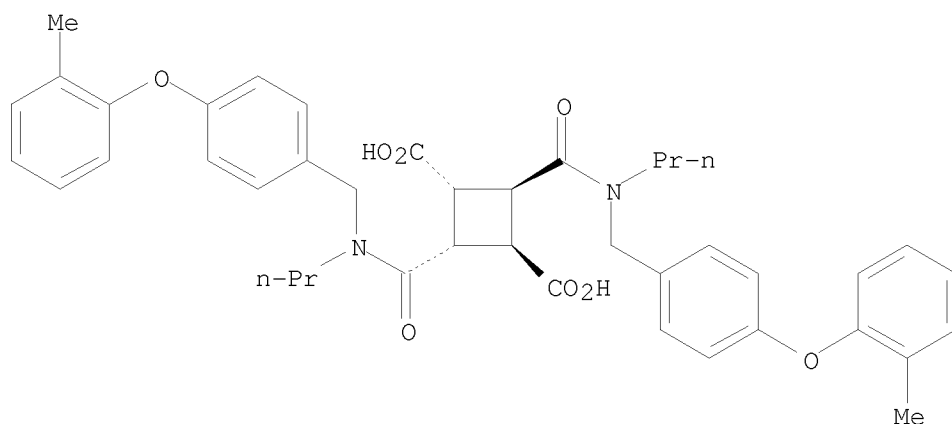
PAGE 1-B



RN 171349-09-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(2-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

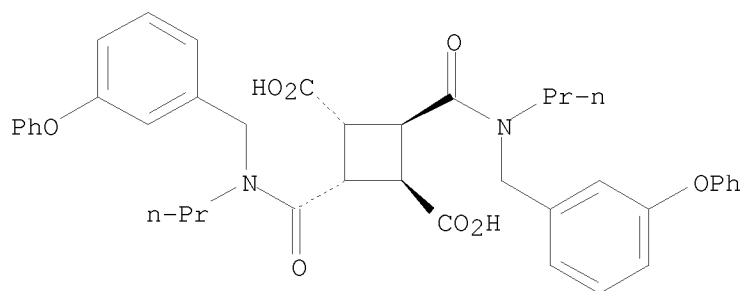




RN 171349-10-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(3-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

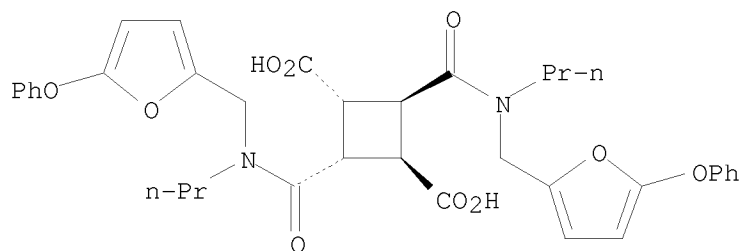
Relative stereochemistry.



RN 171349-11-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(5-phenoxy-2-furanyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

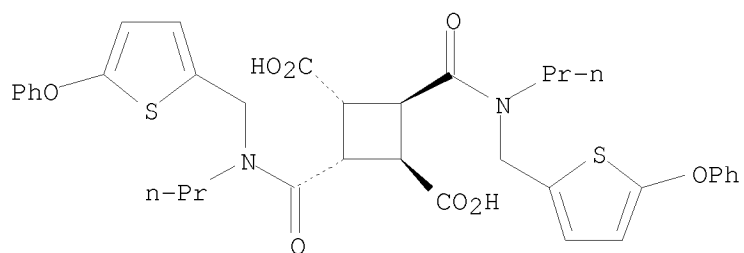
Relative stereochemistry.



RN 171349-12-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(5-phenoxy-2-thienyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

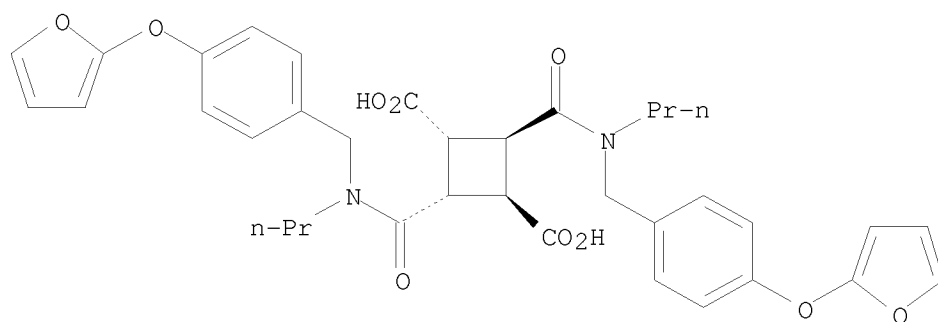
Relative stereochemistry.



RN 171349-13-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(2-furanyloxy)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

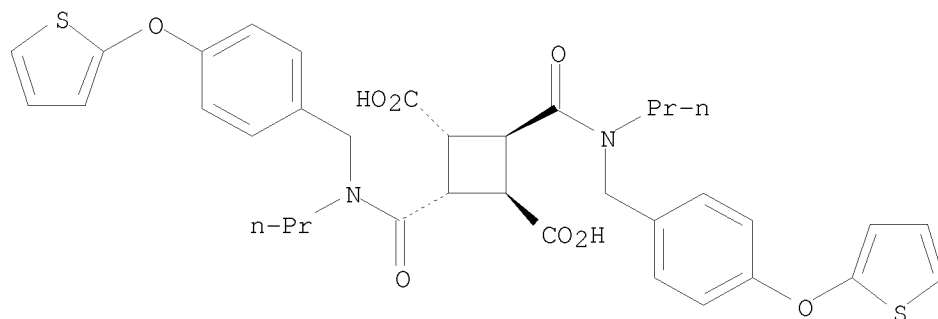
Relative stereochemistry.



RN 171349-14-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[propyl[[4-(2-thienyloxy)phenyl]methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

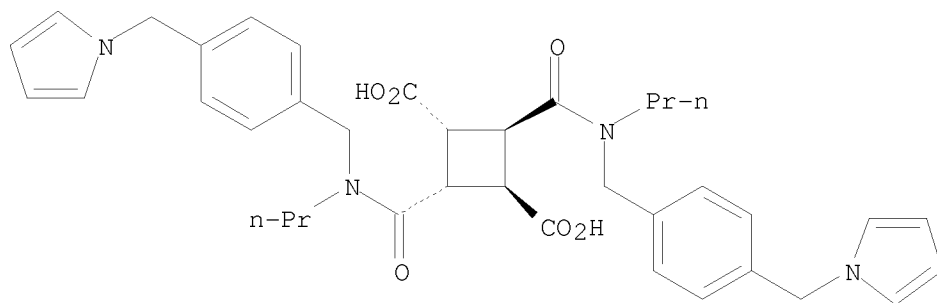
Relative stereochemistry.



RN 171349-15-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[propyl[[4-(1H-pyrrol-1-ylmethyl)phenyl]methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

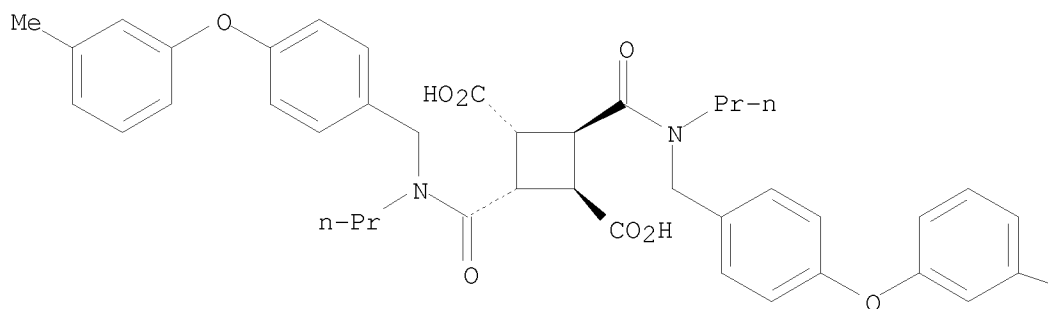
Relative stereochemistry.



RN 171349-16-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(3-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

PAGE 1-A

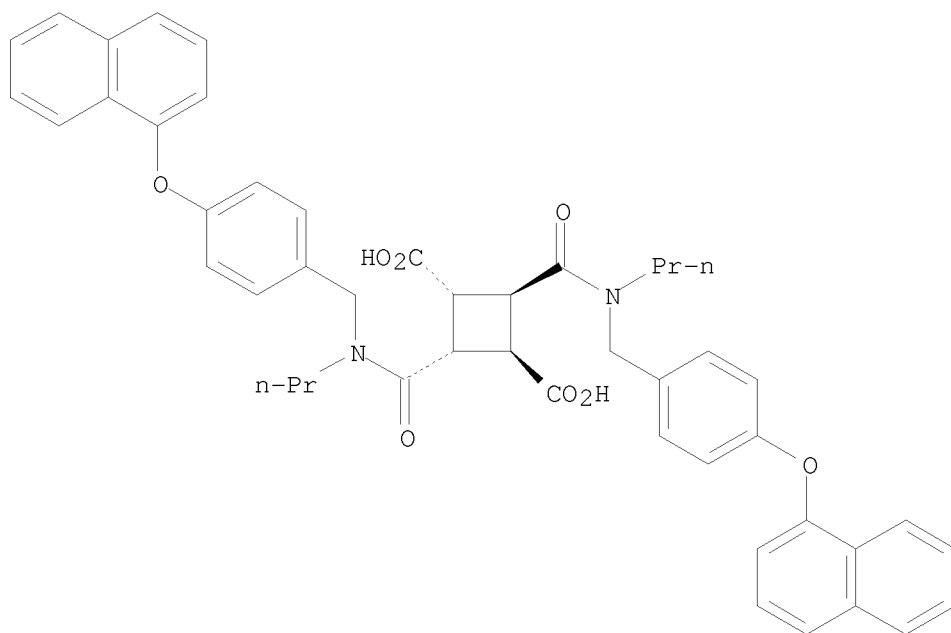


PAGE 1-B



RN 171349-17-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(1-methylnaphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

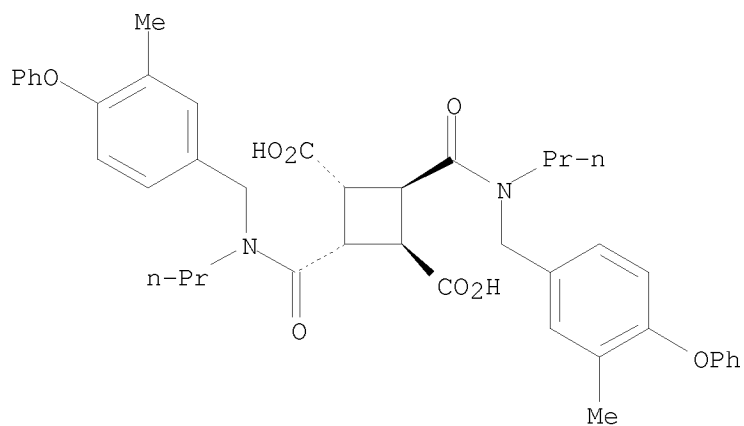
Relative stereochemistry.



RN 171349-18-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(3-methyl-4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

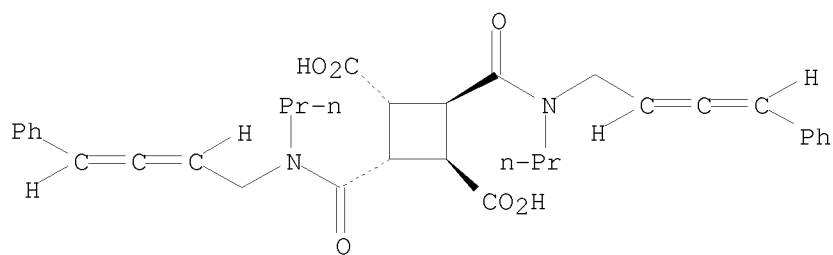
Relative stereochemistry.



RN 171349-19-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenyl-2,3-butadien-1-yl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

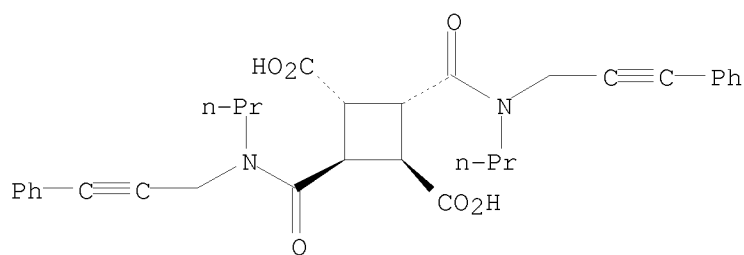
Relative stereochemistry.



RN 171349-20-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(3-phenyl-2-propynyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

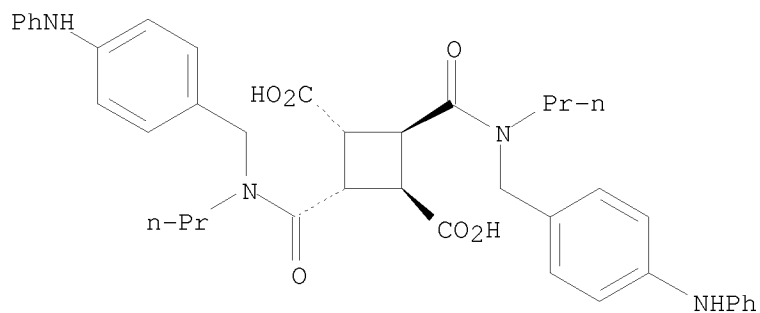
Relative stereochemistry.



RN 171349-21-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylamino)phenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

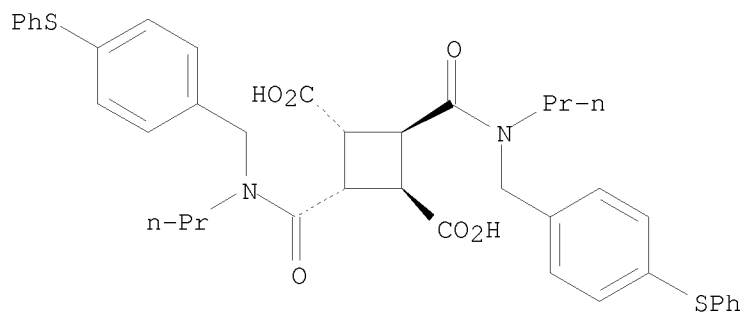
Relative stereochemistry.



RN 171349-22-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylthio)phenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

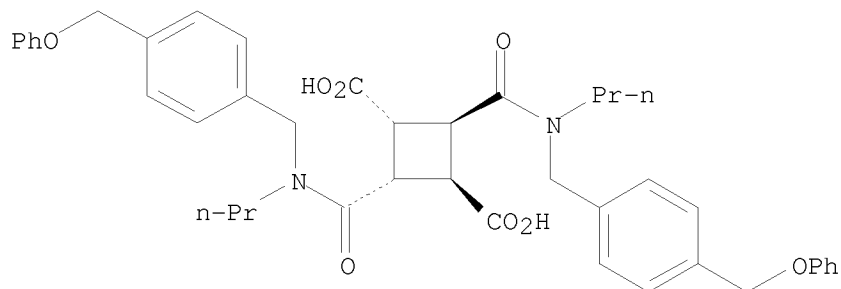
Relative stereochemistry.



RN 171349-23-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenoxymethyl)phenyl]methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

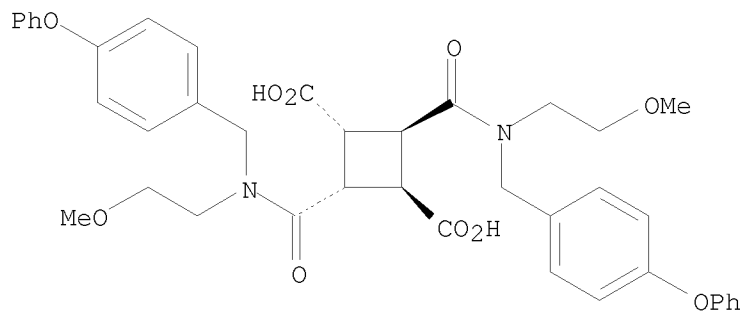
Relative stereochemistry.



RN 171349-24-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-methoxyethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

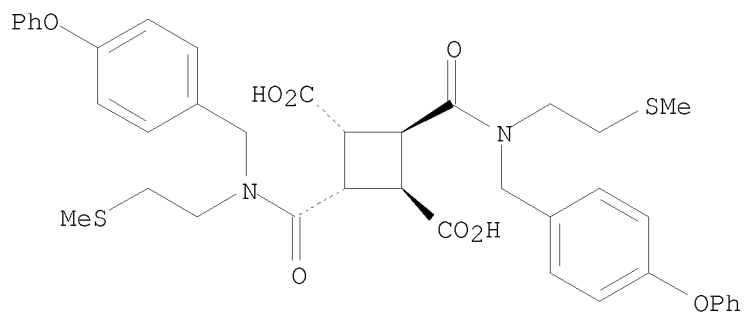
Relative stereochemistry.



RN 171349-25-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(methylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

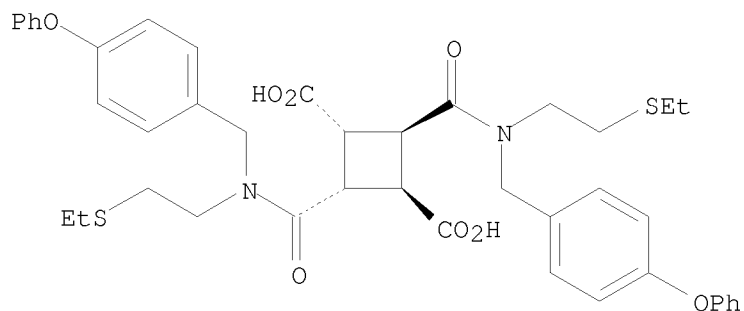
Relative stereochemistry.



RN 171349-26-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-(ethylthio)ethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

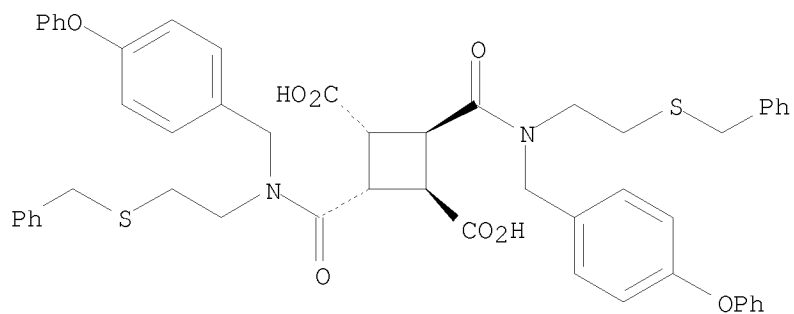
Relative stereochemistry.



RN 171349-27-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl][2-[(phenylmethyl)thio]ethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

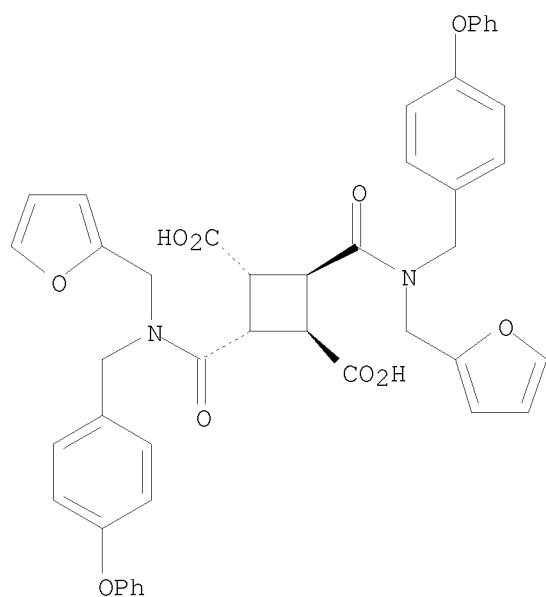
Relative stereochemistry.



RN 171349-28-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-furanylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

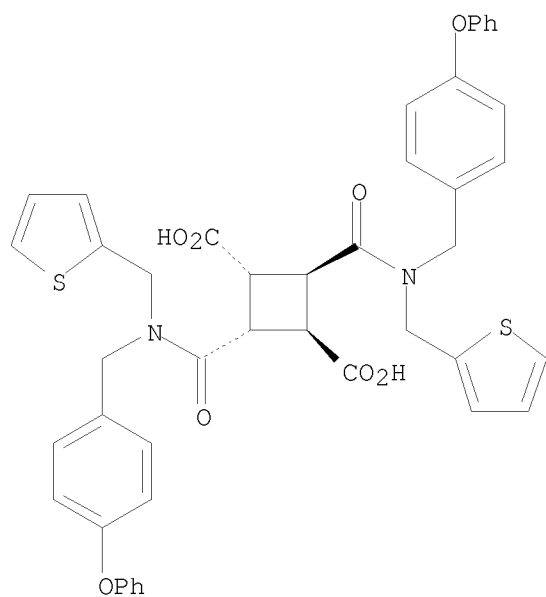
Relative stereochemistry.



RN 171349-29-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

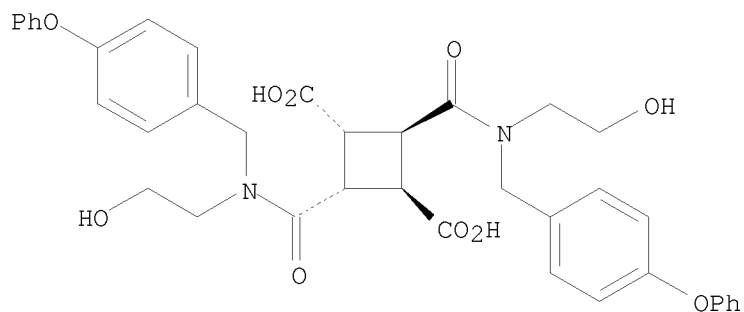


RN 171349-30-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-hydroxyethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

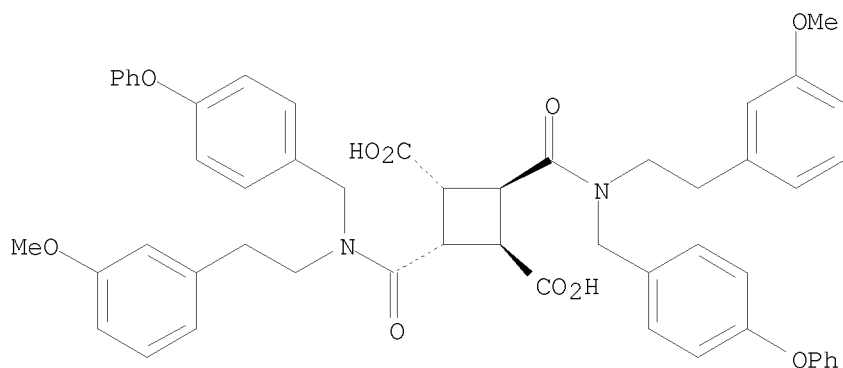




RN 171349-31-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-(3-methoxyphenyl)ethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

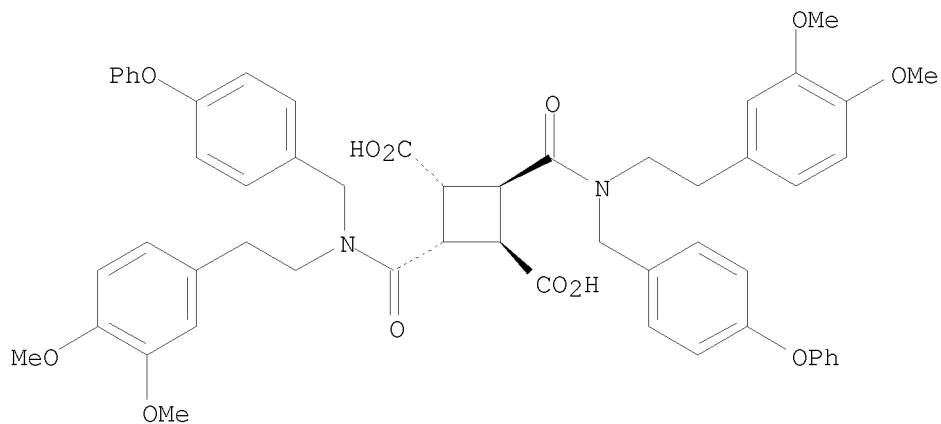
Relative stereochemistry.



RN 171349-32-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-(3,4-dimethoxyphenyl)ethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

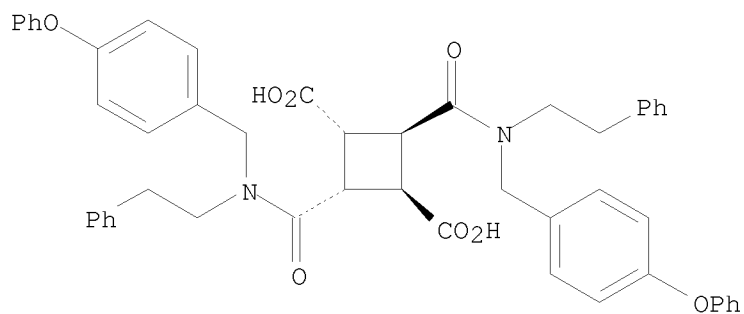
Relative stereochemistry.



RN 171349-33-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](2-phenylethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

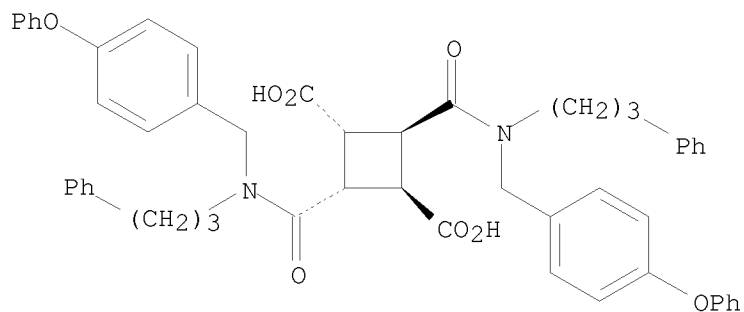
Relative stereochemistry.



RN 171349-34-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](3-phenylpropyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

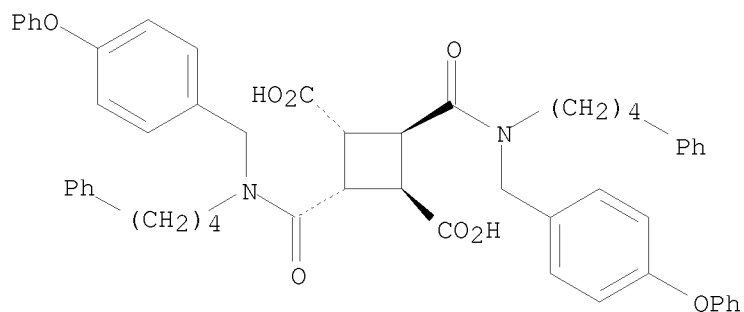
Relative stereochemistry.



RN 171349-35-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](4-phenylbutyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

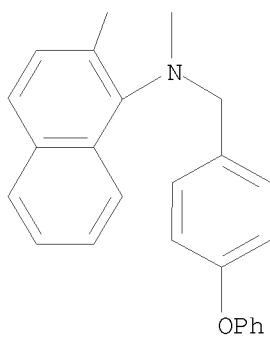
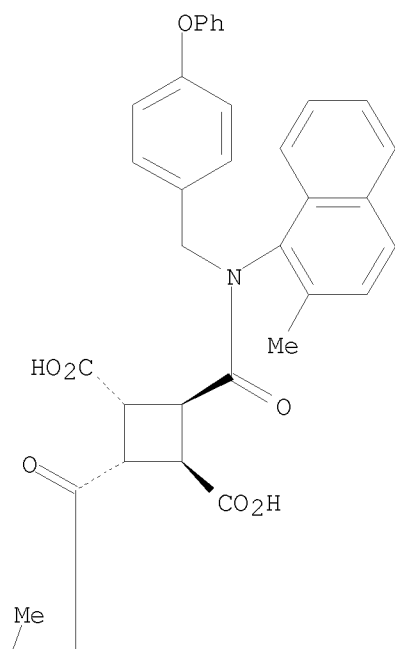
Relative stereochemistry.



RN 171349-36-3 CAPLUS

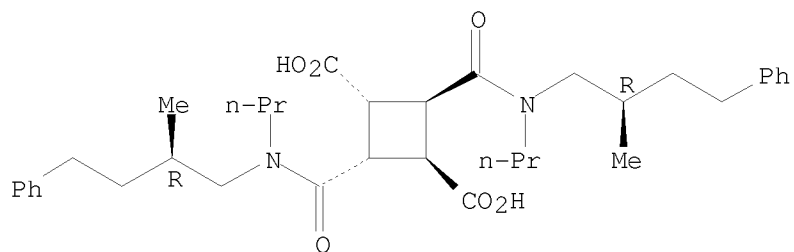
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-methyl-1-naphthalenyl)](4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171349-37-4 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (2-methyl-4-phenylbutyl)propylamino]carbonyl]-, [1 $\alpha$ , 2 $\alpha$  (R\*), 3 $\beta$ , 4 $\beta$  (R\*)]- (9CI) (CA INDEX NAME)

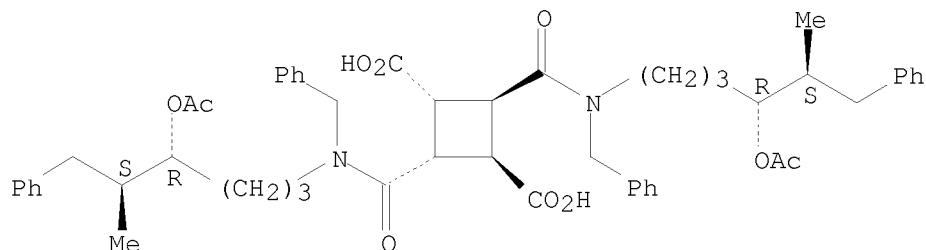
Relative stereochemistry.



RN 171349-39-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(acetyloxy)-5-methyl-6-phenylhexyl](phenylmethyl)amino]carbonyl]-, [1 $\alpha$ ,2 $\alpha$ (4R\*,5S\*),3 $\beta$ ,4 $\beta$ (4R\*,5S\*)]- (9CI) (CA INDEX NAME)

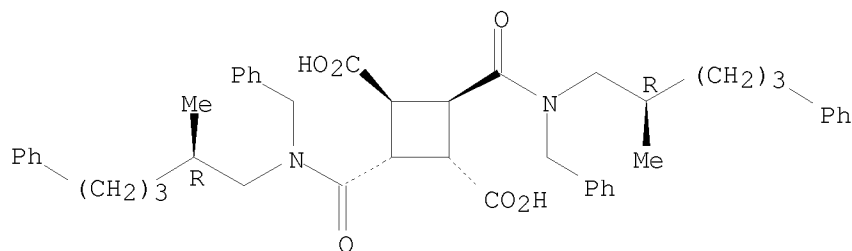
Relative stereochemistry.



RN 171349-40-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(2R)-2-methyl-5-phenylpentyl](phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

Absolute stereochemistry.

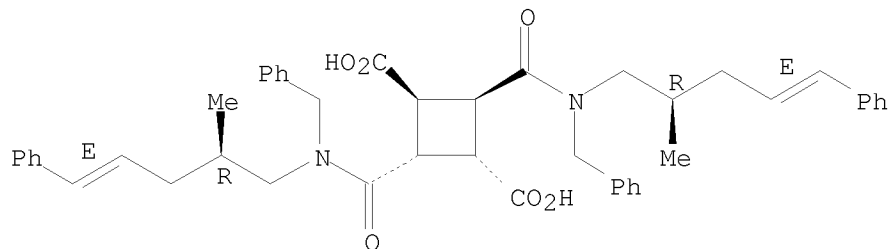


RN 171349-41-0 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(2R,4E)-2-methyl-5-phenyl-4-penten-1-yl](phenylmethyl)amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

Absolute stereochemistry.

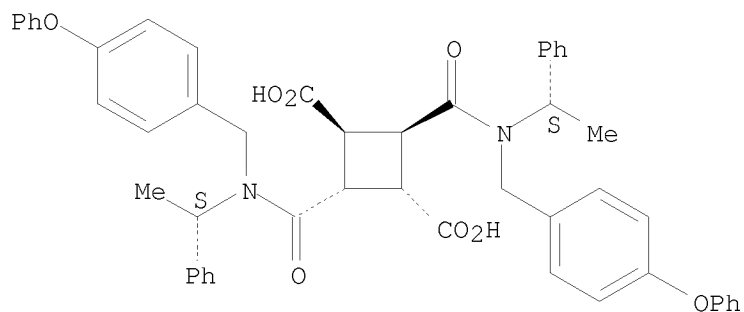
Double bond geometry as shown.



RN 171349-42-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-phenoxyphenyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

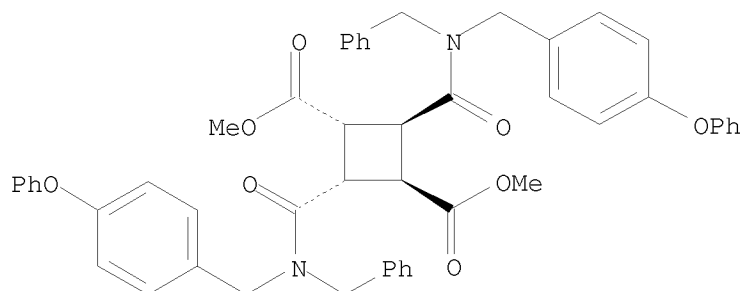
Absolute stereochemistry.



RN 171349-43-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl-, dimethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

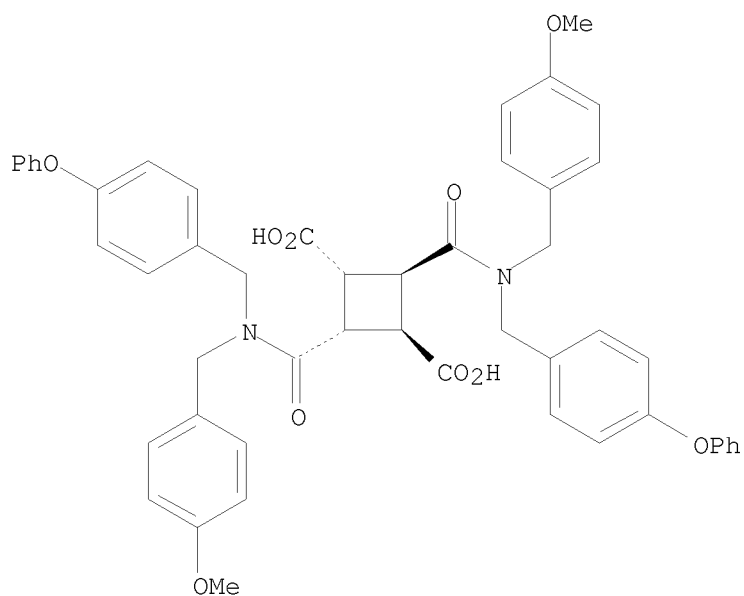
Relative stereochemistry.



RN 171349-44-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-methoxyphenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

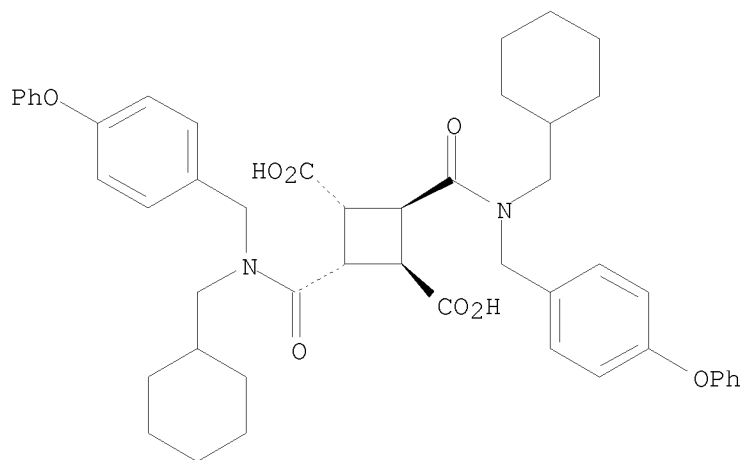
Relative stereochemistry.



RN 171349-45-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (cyclohexylmethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

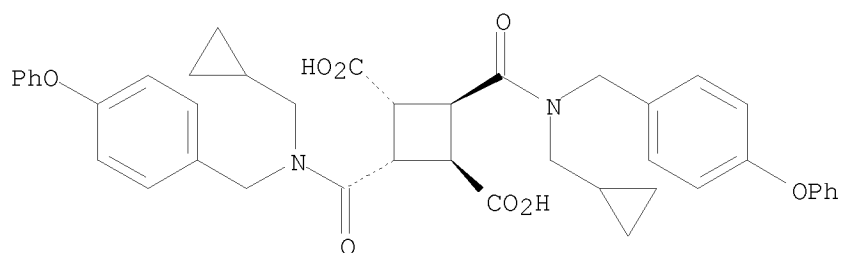
Relative stereochemistry.



RN 171349-47-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (cyclopropylmethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

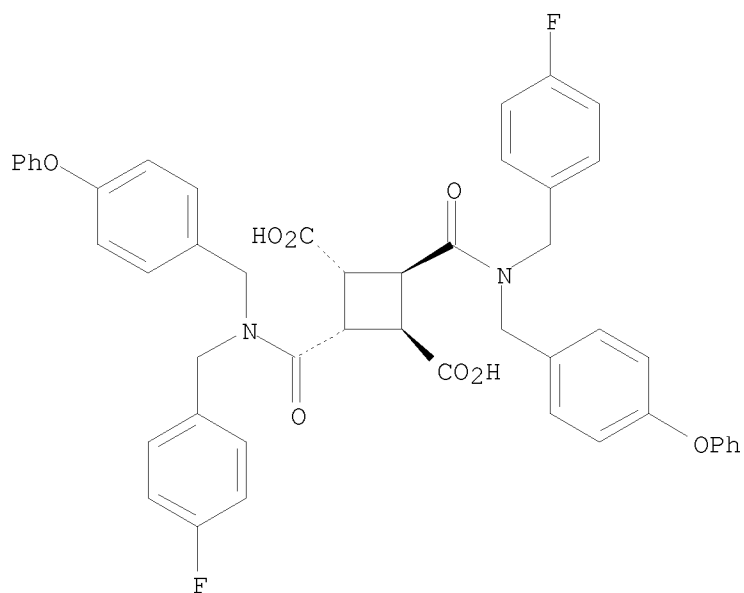
Relative stereochemistry.



RN 171349-48-7 CAPLUS

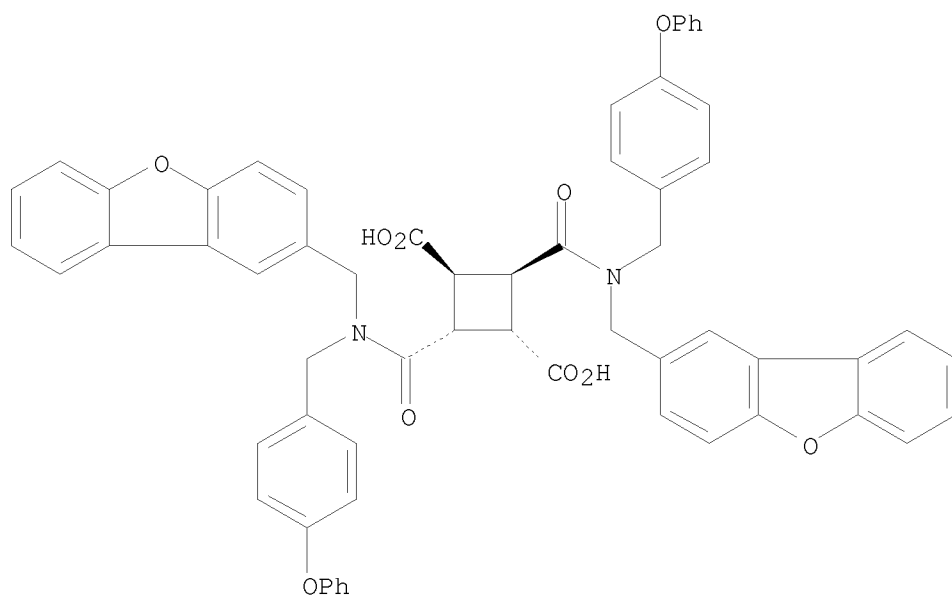
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(4-fluorophenyl)methyl] [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



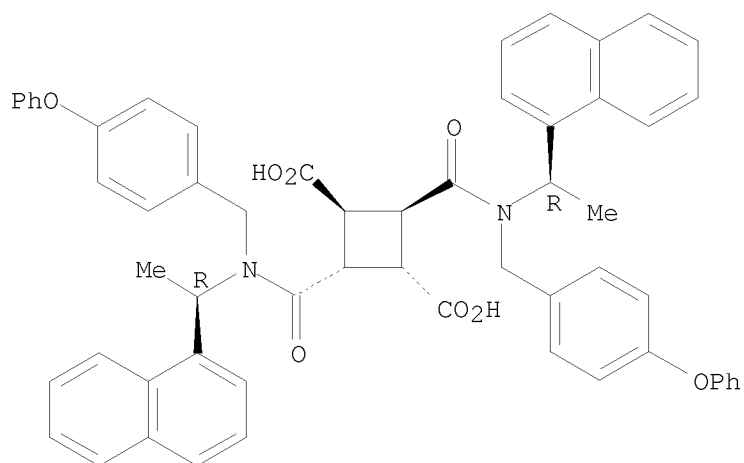
RN 171349-49-8 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(2-dibenzofuranylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 171349-50-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(1R)-1-(1-naphthalenyl)ethyl][[(4-phenoxyphenyl)methyl]amino]carbonyl]-,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

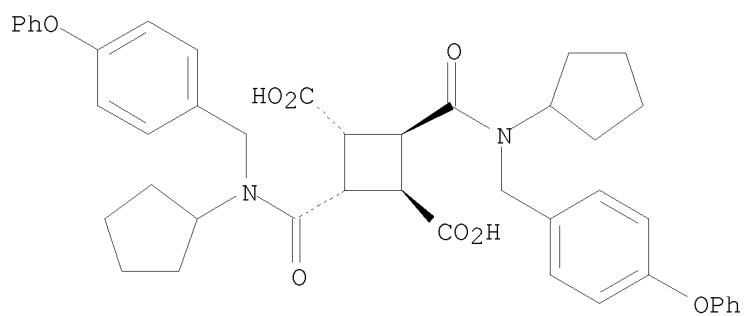
Absolute stereochemistry.



RN 171349-51-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclopentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

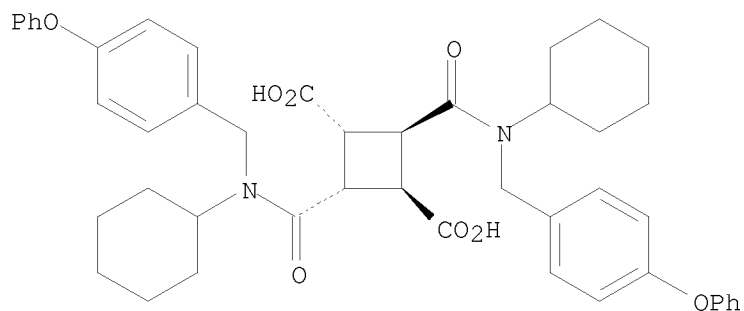
Relative stereochemistry.



RN 171349-52-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclohexyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

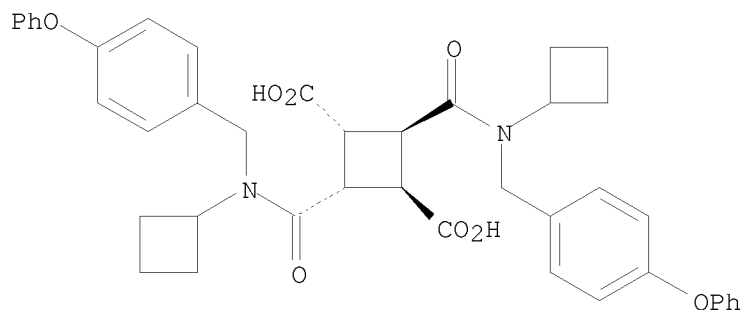


RN 171349-53-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[cyclobutyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)



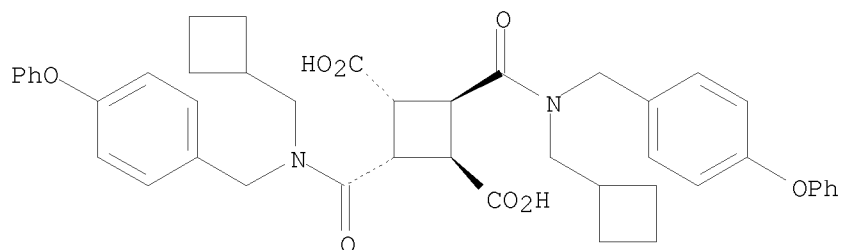
Relative stereochemistry.



RN 171349-54-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(cyclobutylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

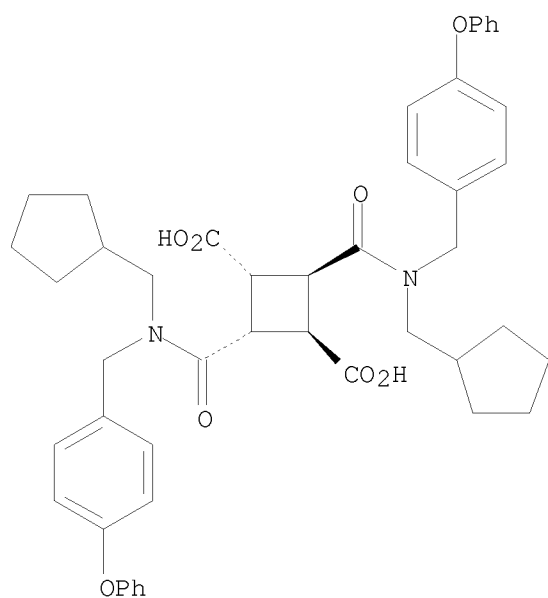
Relative stereochemistry.



RN 171349-55-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(cyclopentylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

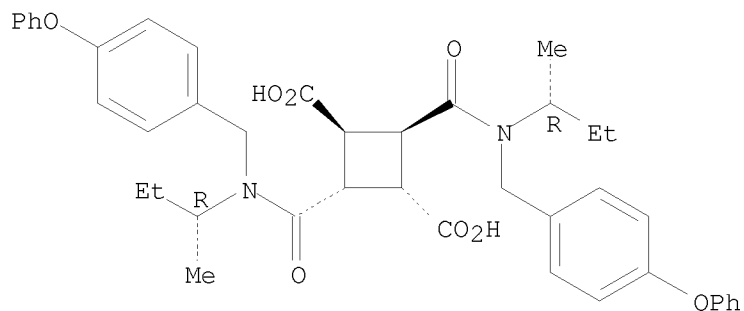
Relative stereochemistry.



RN 171349-56-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(1R)-1-methylpropyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

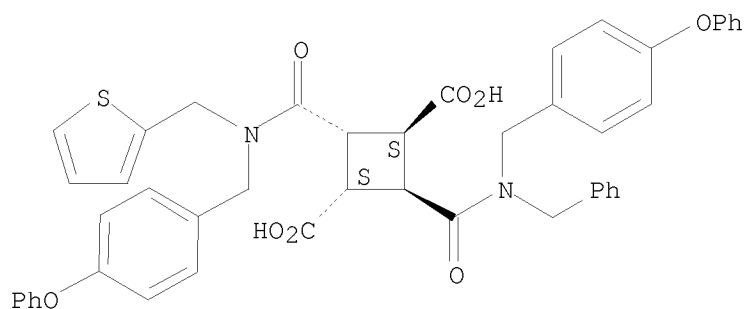
Absolute stereochemistry.



RN 171349-57-8 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

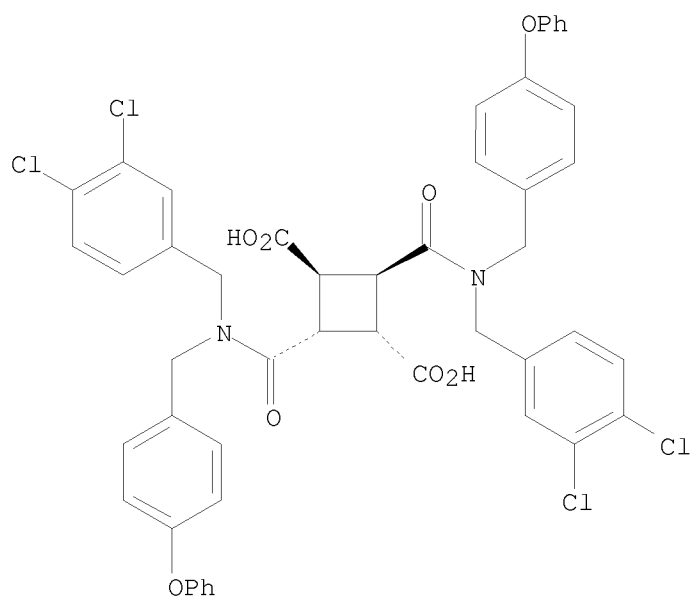
Relative stereochemistry.



RN 171349-58-9 CAPLUS

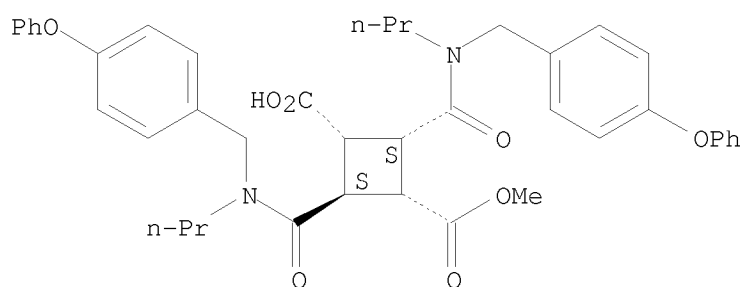
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[(3,4-dichlorophenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



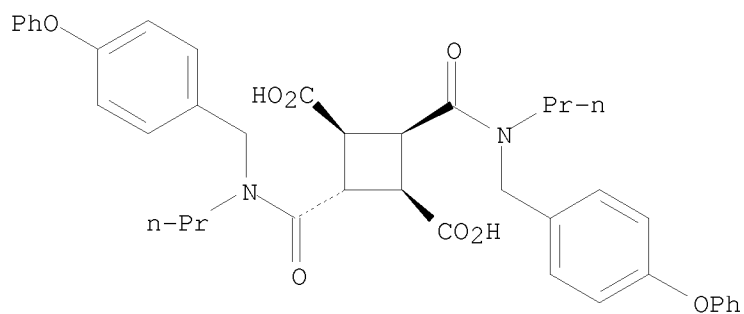
RN 171483-63-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 171483-64-0 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

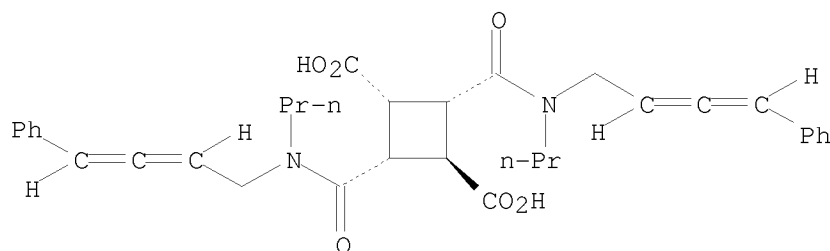
Relative stereochemistry.



RN 171483-65-1 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-phenyl-2,3-butadienyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\beta$ )-(9CI) (CA INDEX NAME)

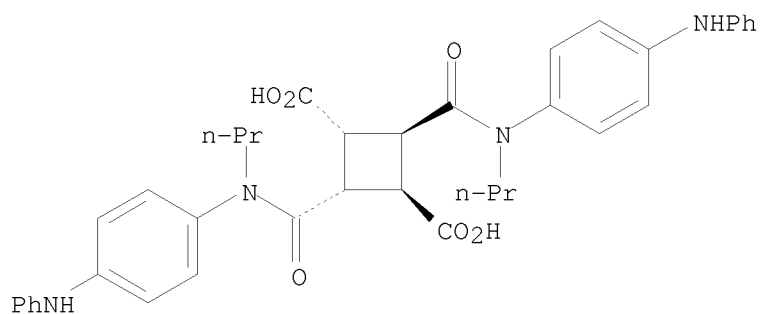
Relative stereochemistry.



RN 171483-66-2 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

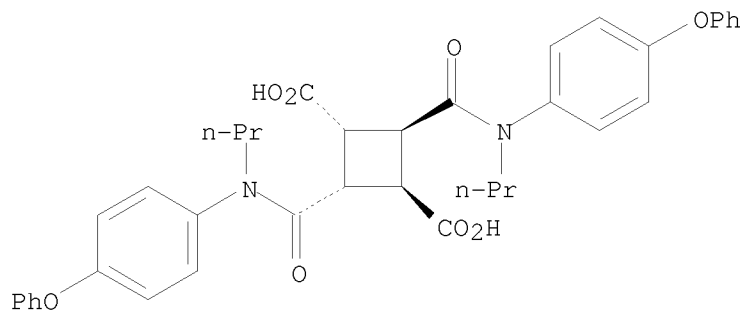
Relative stereochemistry.



RN 171483-67-3 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-phenoxyphenyl)propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

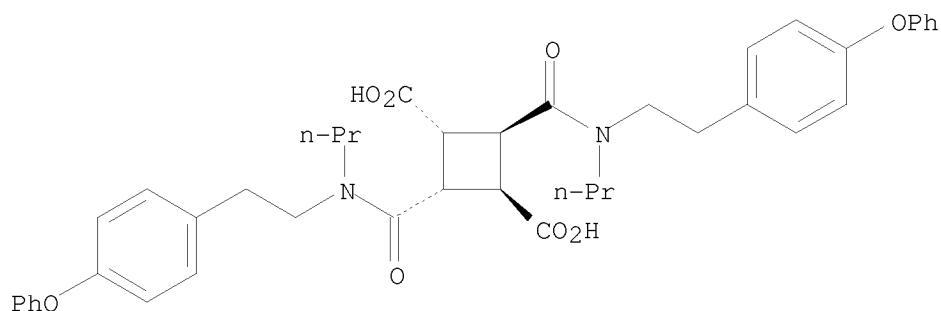
Relative stereochemistry.



RN 171483-68-4 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]-, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )-(CA INDEX NAME)

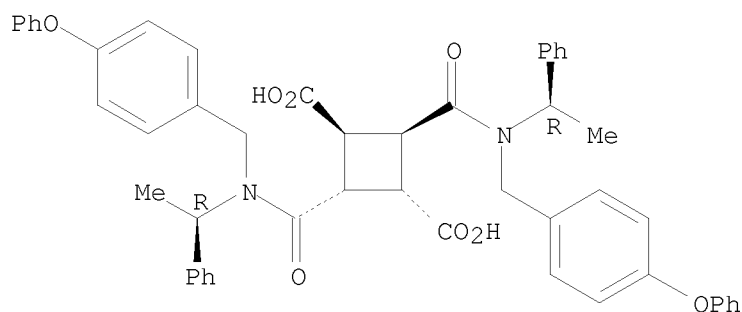
Relative stereochemistry.



RN 171483-69-5 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[(4-phenoxyphenyl)methyl][(1R)-1-phenylethyl]amino]carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 71 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:902590 CAPLUS

DOCUMENT NUMBER: 123:313433

ORIGINAL REFERENCE NO.: 123:56175a,56178a

TITLE: Cyclobutane derivatives as inhibitors of squalene synthetase and protein farnesyltransferase

INVENTOR(S): Baker, William R.; Rockway, Todd W.; Donner, B. Gregory; Shen, Wang; Rosenberg, Saul H.; Fakhoury, Stephen A.; O'Connor, Stephen J.; Stout, David M.; Fung, Anthony K. L.; et al.

PATENT ASSIGNEE(S): Abbott Laboratories, USA

SOURCE: PCT Int. Appl., 223 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9512572	A1	19950511	WO 1994-US12132	19941020
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2152822	A1	19950511	CA 1994-2152822	19941020
EP 677039	A1	19951018	EP 1994-931987	19941020
EP 677039	B1	19990310		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
JP 08505646	T	19960618	JP 1994-513255	19941020

AT 177420  
ES 2130452  
PRIORITY APPLN. INFO.:

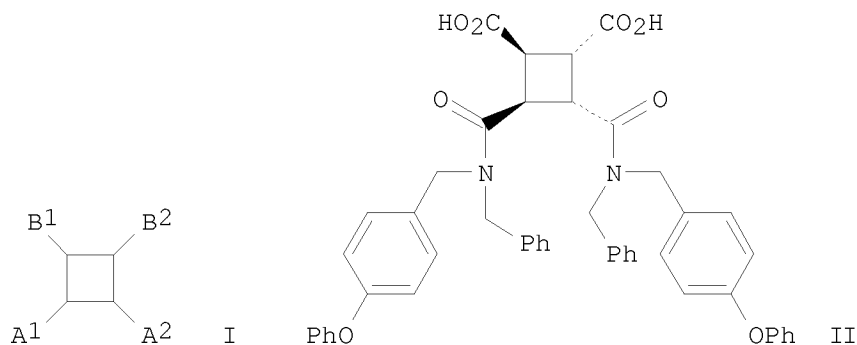
T 19990315  
T3 19990701

AT 1994-931987  
ES 1994-931987  
US 1993-147708  
US 1994-289711  
WO 1994-US12132

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19941020  
A 19931104  
A 19940909  
W 19941020

OTHER SOURCE(S):  
GI

MARPAT 123:313433



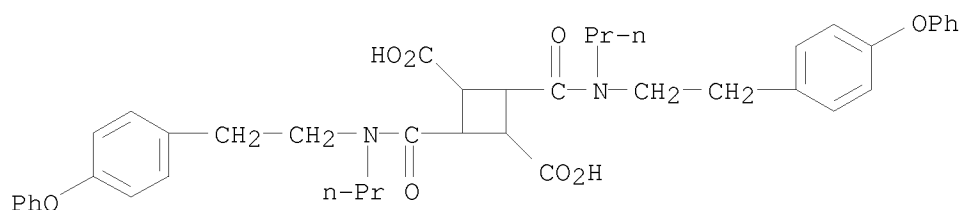
AB The invention provides compds. I [A1, A2 = -XC(O)G, -XC(S)G, -(CH2)<sub>q</sub>NR1R2; X = bond, CH2, O, S, (un)substituted NH; G = R2, NR1R2, OR2, SR2; R1 = H, alkyl, alkenyl, (un)substituted aryl, heterocyclyl, etc.; R2 = alkenyl, (un)substituted aryl, heterocyclyl, etc.; q = 0-2; B1, B2 = CH2OH, CH:NOH, WR3, addnl. carbonyl-containing groups; W = bond, alkylene, alkenylene, CONH, NHCONH; R3 = various (un)substituted heterocyclic groups or squaric acid residue]. Also disclosed are preparation processes, intermediates, pharmaceutical compns., and treatment of hypercholesterolemic disorders, cancer, or fungal infections using the compds. I inhibit biosynthesis of cholesterol (and also fungal growth) by inhibiting squalene synthetase. I also inhibit farnesylation of the oncogene protein Ras by inhibiting protein farnesyltransferase (no data). For example, reaction of anti-1,2,3,4-cyclobutanetetracarboxylic dianhydride with 2 equiv 4-PhOC6H4CH2NHCH2Ph in THF at 25°, followed by workup and chromatog. of the isomeric products, gave 6% title compound II. In an in vitro test, II at 10 μM gave 99% inhibition of rat liver microsomal squalene synthetase. Over 160 synthetic examples (approx. 115 compds. I with data) are given, with similar test data for most compds.

IT 169943-31-1P 169943-32-2P 169943-33-3P  
169943-34-4P 169943-35-5P 169943-36-6P  
169943-37-7P 169943-38-8P 169943-39-9P  
RL: BYP (Byproduct); PREP (Preparation)

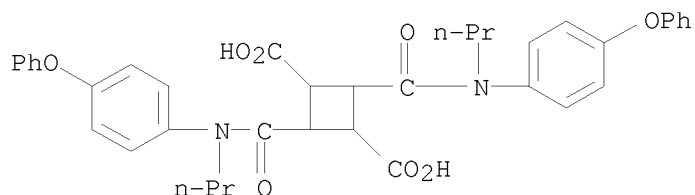
(byproduct; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

RN 169943-31-1 CAPLUS

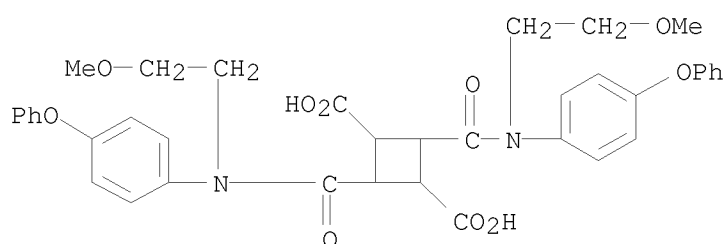
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]- (CA INDEX NAME)



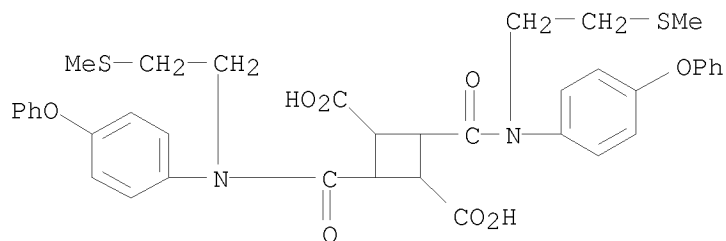
RN 169943-32-2 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (4-phenoxyphenyl)propylamino]carbonyl]- (CA INDEX NAME)



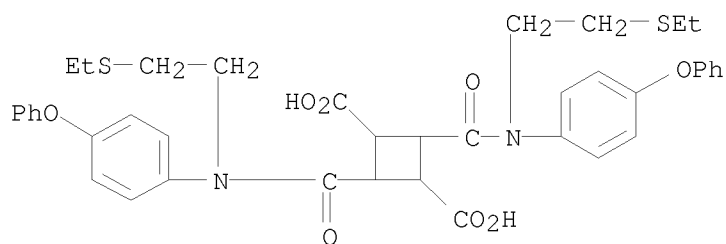
RN 169943-33-3 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (2-methoxyethyl) (4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)



RN 169943-34-4 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ [2-(methylthio)ethyl] (4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)

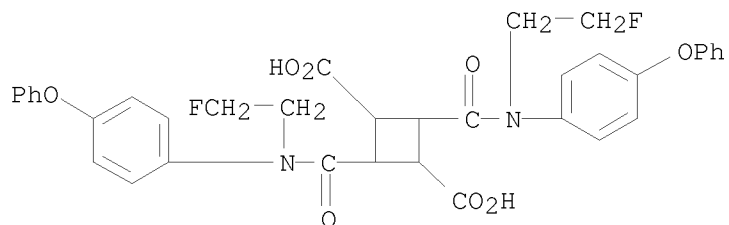


RN 169943-35-5 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ [2-(ethylthio)ethyl] (4-phenoxyphenyl)amino]carbonyl]- (CA INDEX NAME)



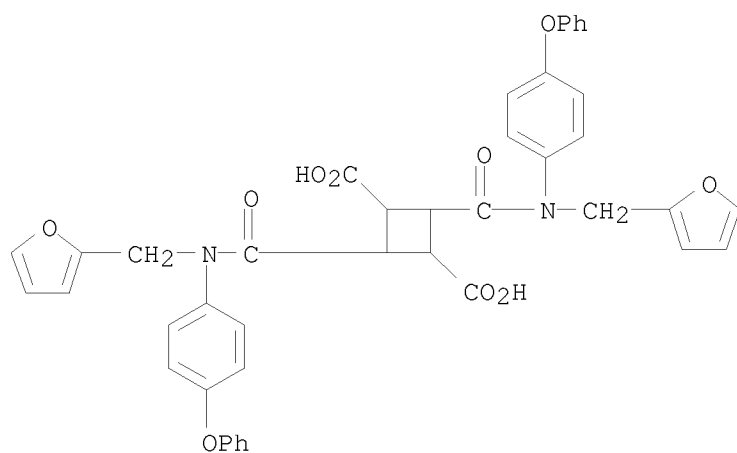
RN 169943-36-6 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (2-fluoroethyl) (4-phenoxyphenyl) amino]carbonyl]- (CA INDEX NAME)



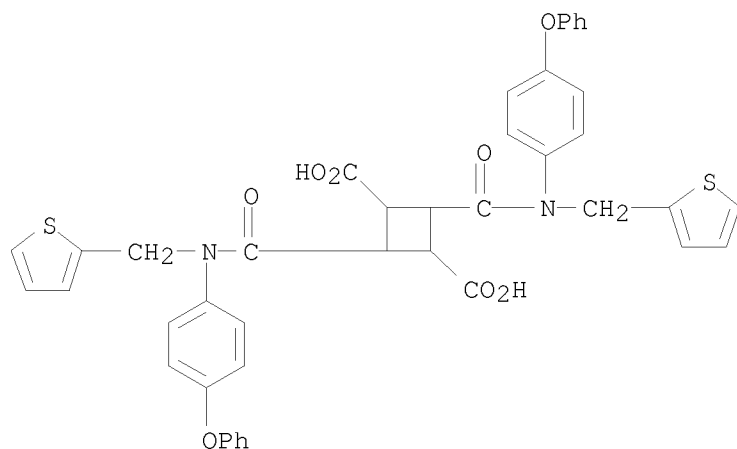
RN 169943-37-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (2-furanylmethyl) (4-phenoxyphenyl) amino]carbonyl]- (CA INDEX NAME)



RN 169943-38-8 CAPLUS

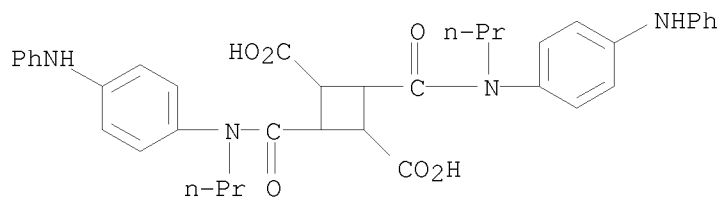
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[ (4-phenoxyphenyl) (2-thienylmethyl) amino]carbonyl]- (CA INDEX NAME)



RN 169943-39-9 CAPLUS

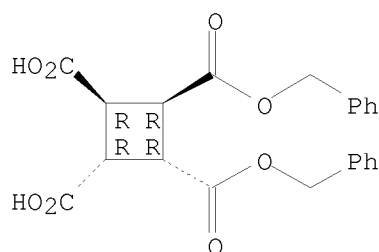
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]- (CA INDEX NAME)



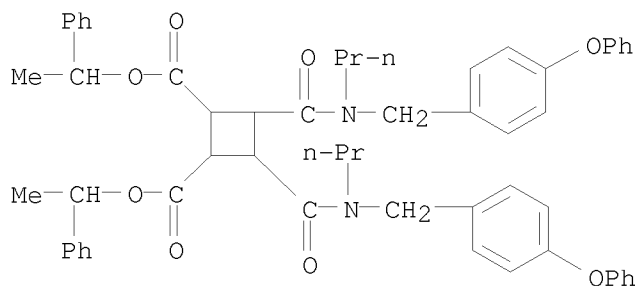


IT 169943-15-1P  
 RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)  
 RN 169943-15-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

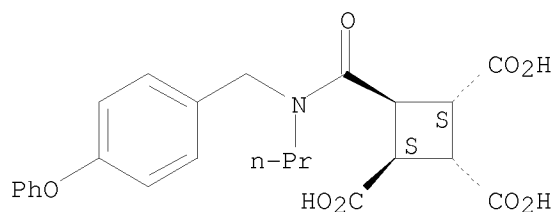


IT 169942-83-0P 169942-84-1P 169942-85-2P  
 169943-03-7P 169943-05-9P 169943-06-0P  
 169943-07-1P 169943-16-2P 170207-72-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)  
 RN 169942-83-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1,2-bis(1-phenylethyl) ester (CA INDEX NAME)



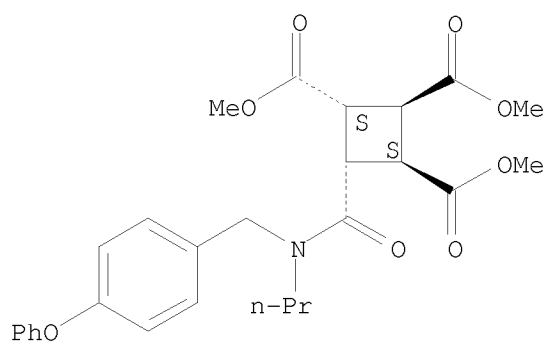
RN 169942-84-1 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid, 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1α,2β,3β,4α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



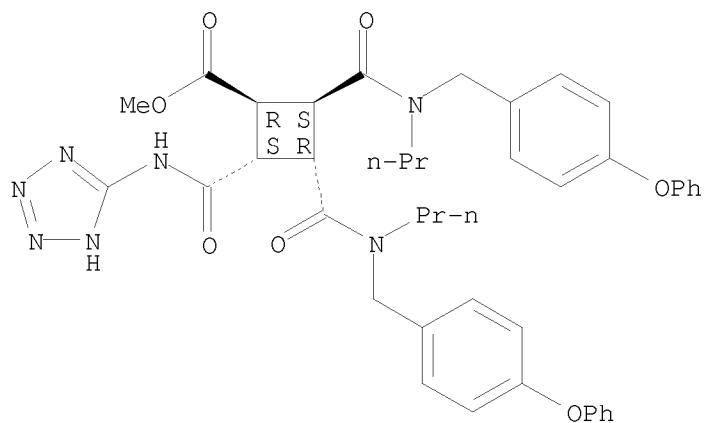
RN 169942-85-2 CAPLUS  
 CN 1,2,3-Cyclobutanetricarboxylic acid,  
 4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, trimethyl ester,  
 (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



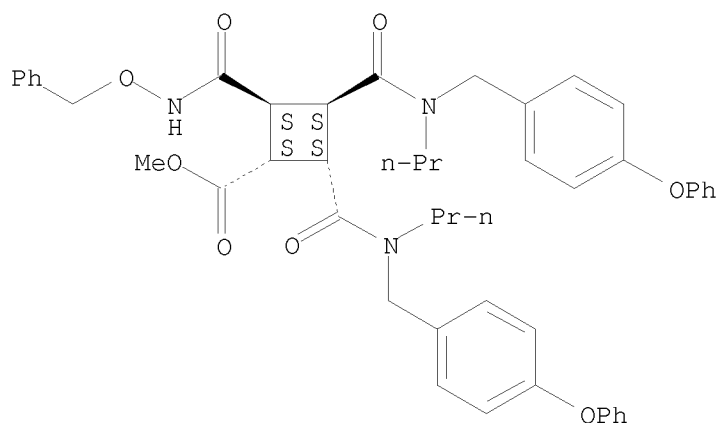
RN 169943-03-7 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[(1H-tetrazol-5-ylamino)carbonyl]-, methyl ester, (1R, 2S, 3R, 4S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 169943-05-9 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[[[(phenylmethoxy)amino]carbonyl]-, methyl ester, (1R, 2R, 3R, 4R)-rel- (CA INDEX NAME)

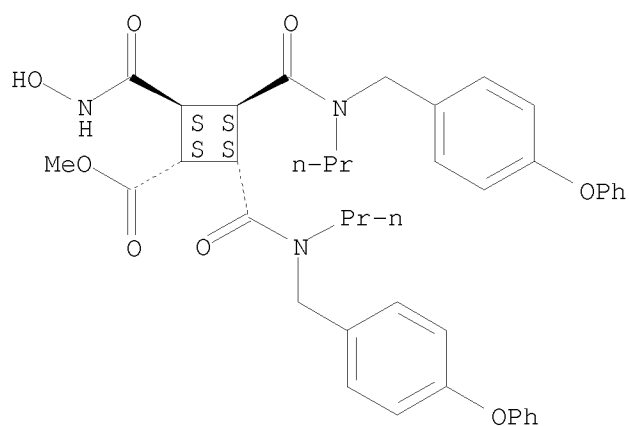
Relative stereochemistry.



RN 169943-06-0 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[(hydroxyamino)carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, methyl ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

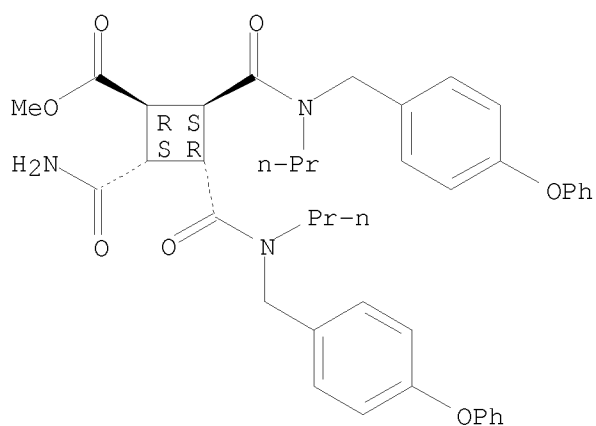
Relative stereochemistry.



RN 169943-07-1 CAPLUS

CN Cyclobutanecarboxylic acid, 2-(aminocarbonyl)-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, methyl ester, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

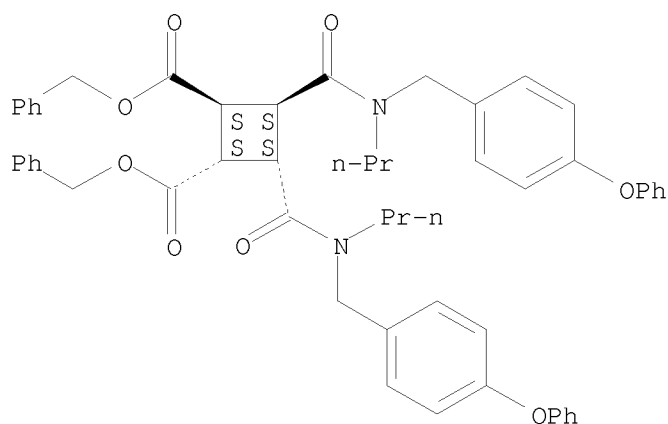
Relative stereochemistry.



RN 169943-16-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, bis(phenylmethyl) ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

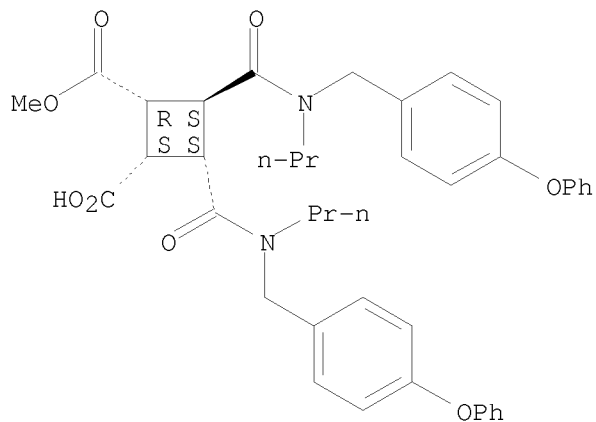
Relative stereochemistry.



RN 170207-72-4 CAPLUS

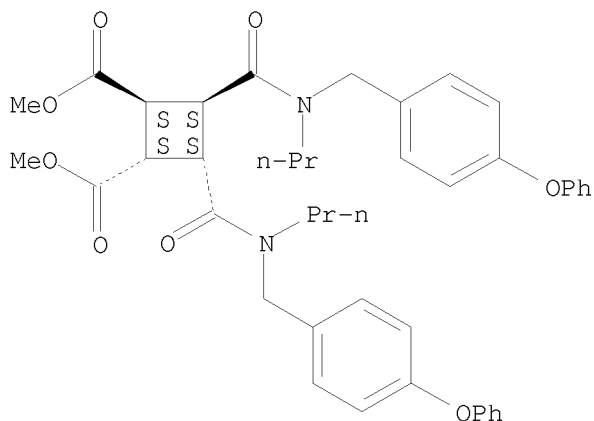
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1R,2S,3S,4S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



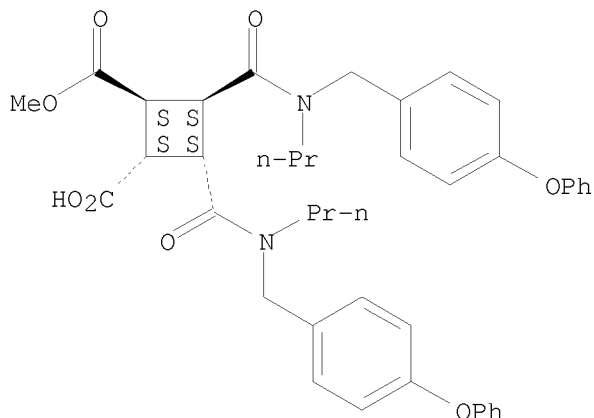
IT 169942-55-6P 169942-56-7P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)  
 RN 169942-55-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, dimethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 169942-56-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monomethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT 169941-79-1P 169941-80-4P 169941-81-5P  
 169941-82-6P 169941-83-7P 169941-84-8P  
 169941-85-9P 169941-86-0P 169941-87-1P  
 169941-88-2P 169941-89-3P 169941-90-6P  
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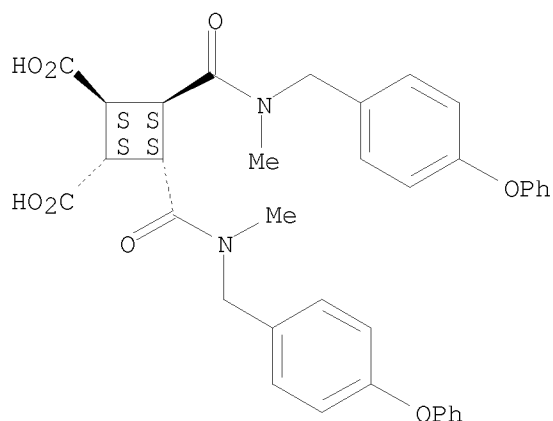
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

RN 169941-79-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

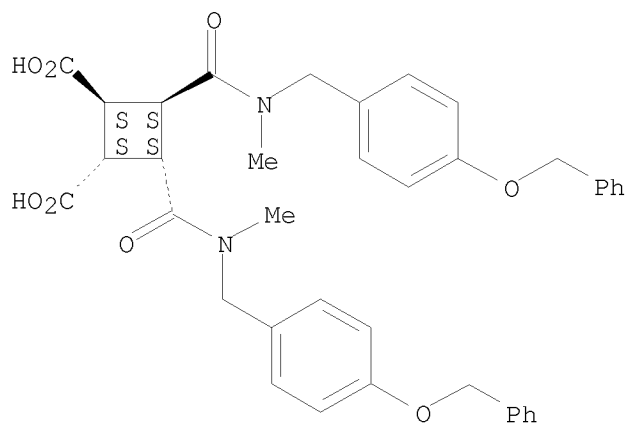
Relative stereochemistry.



RN 169941-80-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[[4-(phenylmethoxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

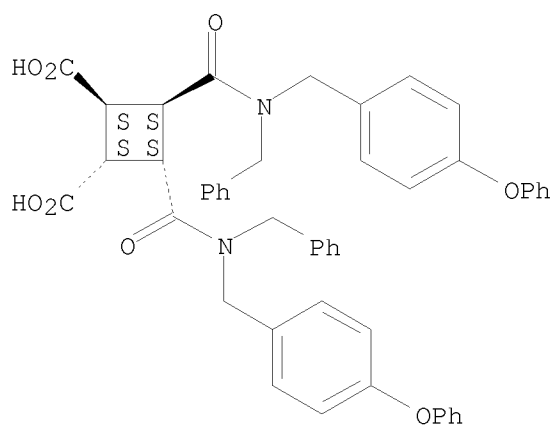
Relative stereochemistry.



RN 169941-81-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

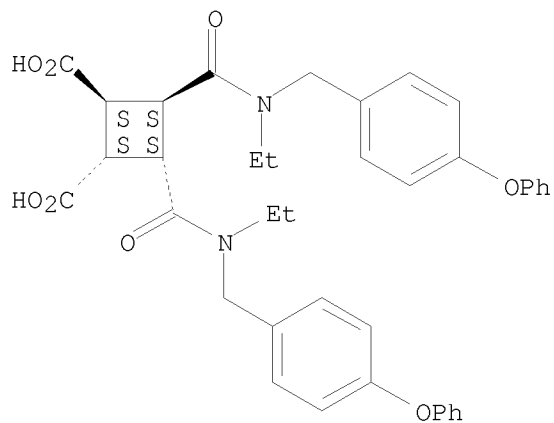
Relative stereochemistry.



RN 169941-82-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ethyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

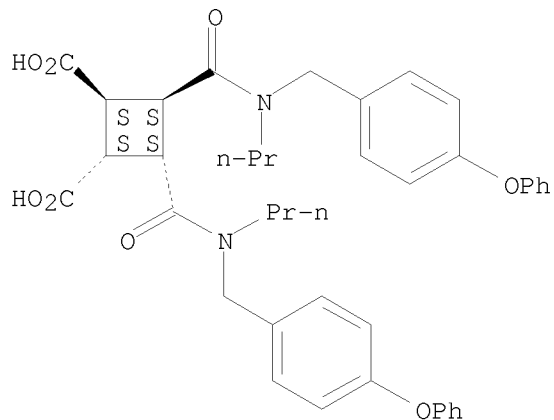
Relative stereochemistry.



RN 169941-83-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

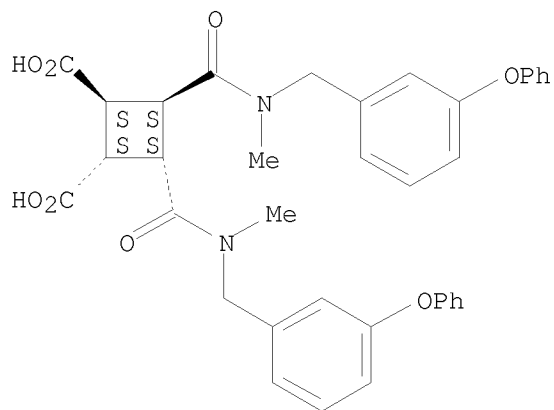
Relative stereochemistry.



RN 169941-84-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(3-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

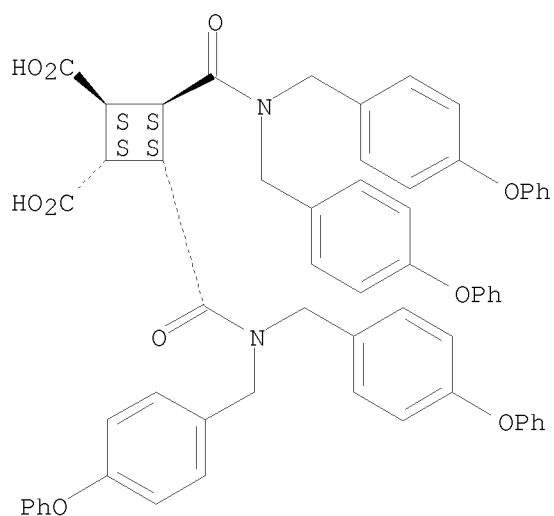


RN 169941-85-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[bis[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

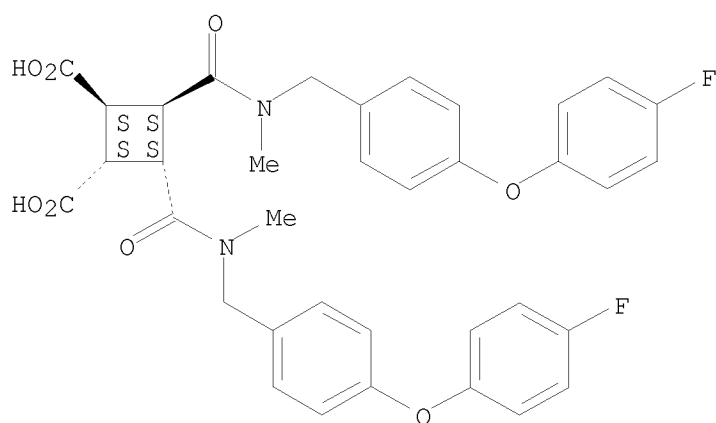




RN 169941-86-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1R,2R,3R,4R)-rel-  
(CA INDEX NAME)

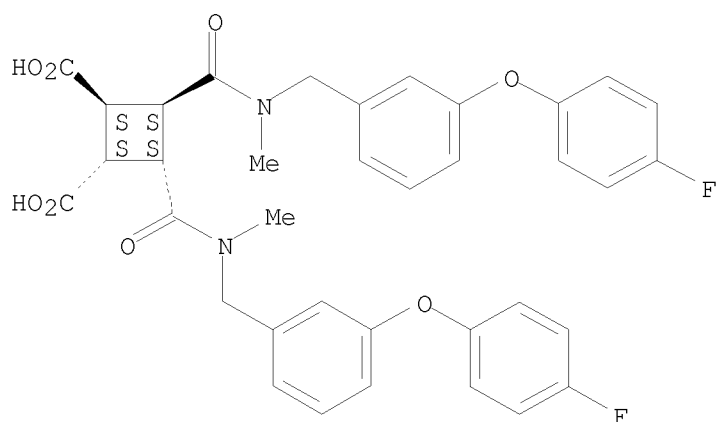
Relative stereochemistry.



RN 169941-87-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[3-(4-fluorophenoxy)phenyl]methyl]methylamino]carbonyl]-, (1R,2R,3R,4R)-rel-  
(CA INDEX NAME)

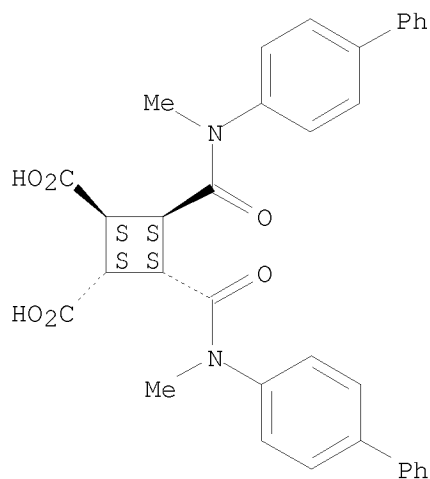
Relative stereochemistry.



RN 169941-88-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[([1,1'-biphenyl]-4-ylmethylamino)carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

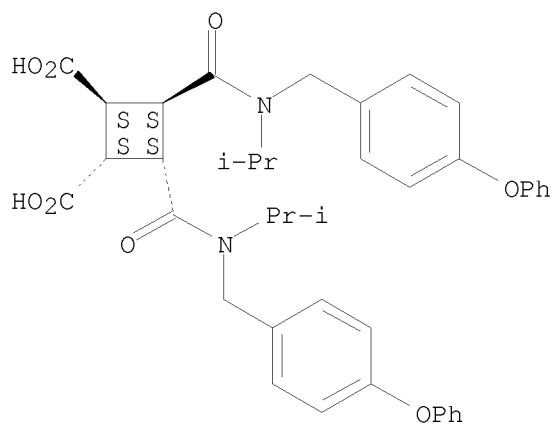
Relative stereochemistry.



RN 169941-89-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[(1-methylethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

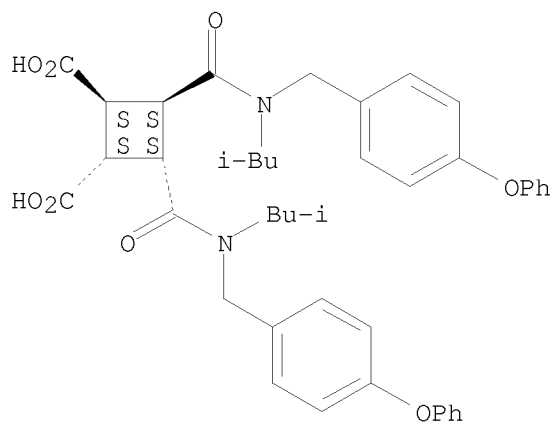
Relative stereochemistry.



RN 169941-90-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ (2-methylpropyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

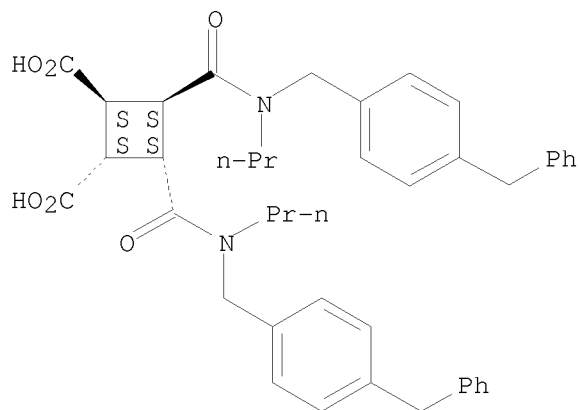
Relative stereochemistry.



RN 169941-91-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[ (4-(phenylmethyl)phenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

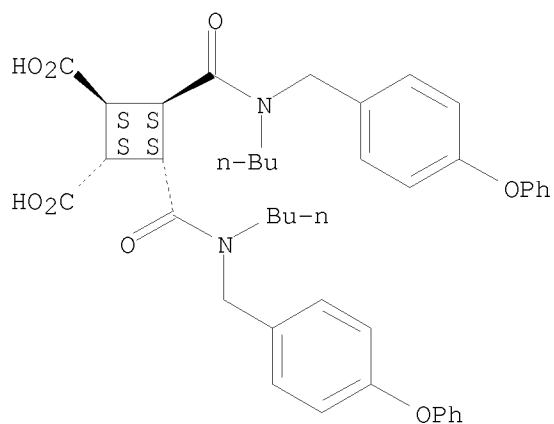
Relative stereochemistry.



RN 169941-92-8 CAPLUS

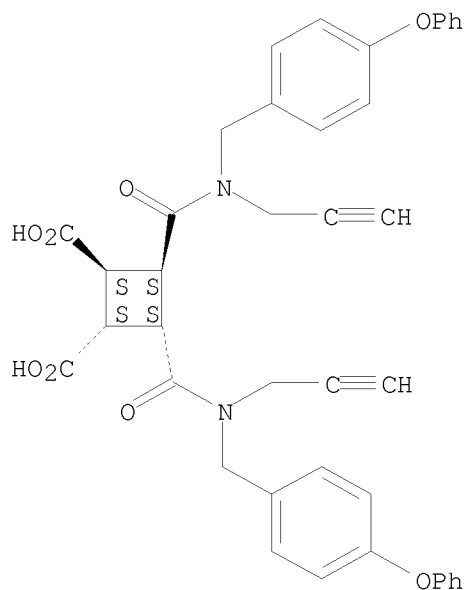
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[butyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



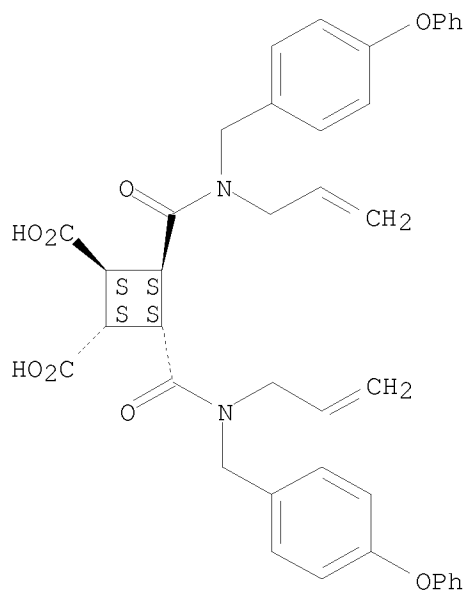
RN 169941-93-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]-2-propyn-1-ylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169941-94-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]-2-propen-1-ylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

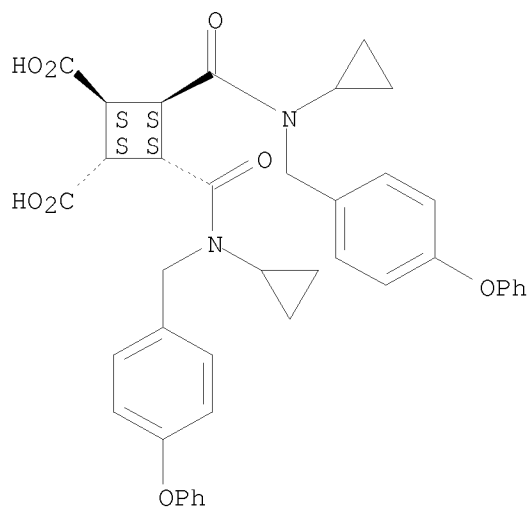
Relative stereochemistry.



RN 169941-95-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopropyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

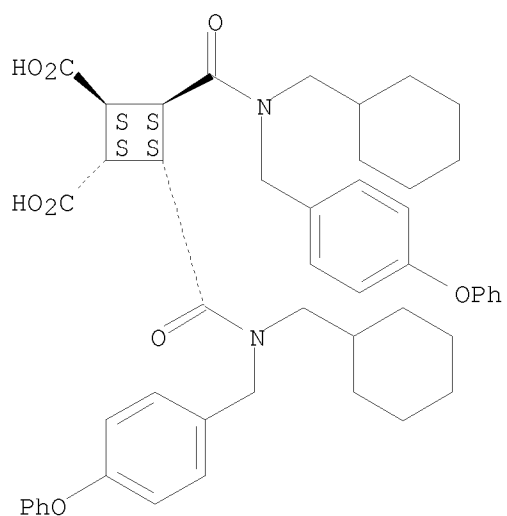
Relative stereochemistry.



RN 169941-96-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclohexylmethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

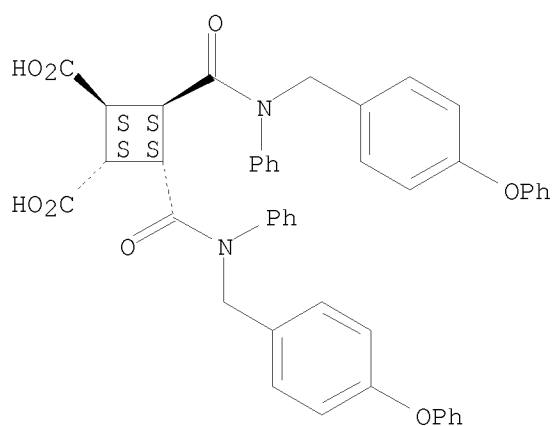
Relative stereochemistry.



RN 169941-97-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]phenylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

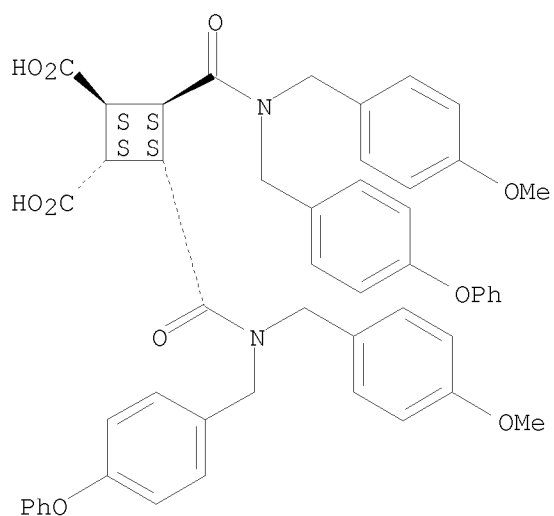
Relative stereochemistry.



RN 169941-98-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-methoxyphenyl)methyl]phenylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

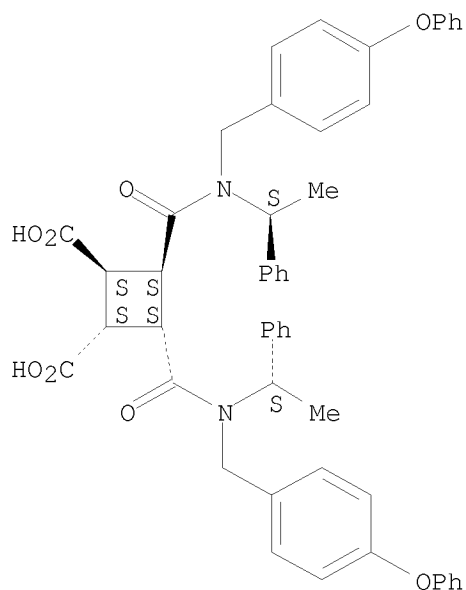
Relative stereochemistry.



RN 169941-99-5 CAPLUS

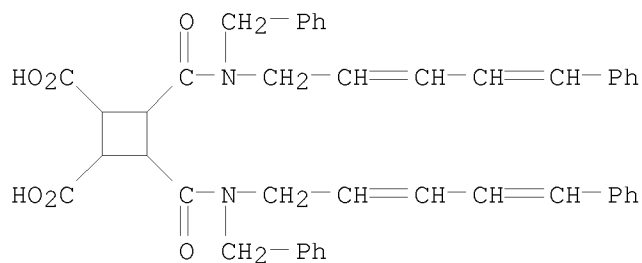
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]-, (1S,2S,3S,4S)- (CA INDEX NAME)

Absolute stereochemistry.



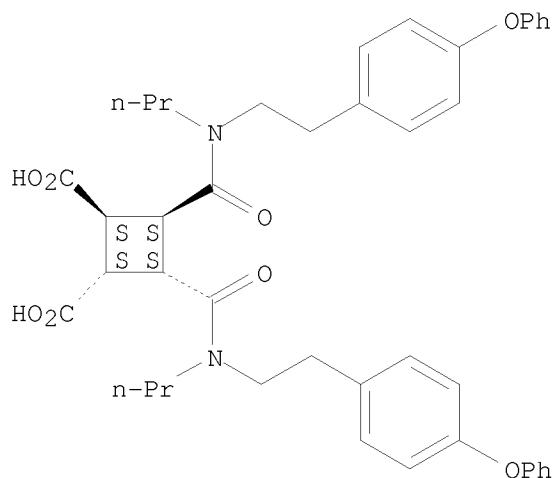
RN 169942-00-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(phenylmethyl)(5-phenyl-2,4-pentadien-1-yl)amino]carbonyl]- (CA INDEX NAME)



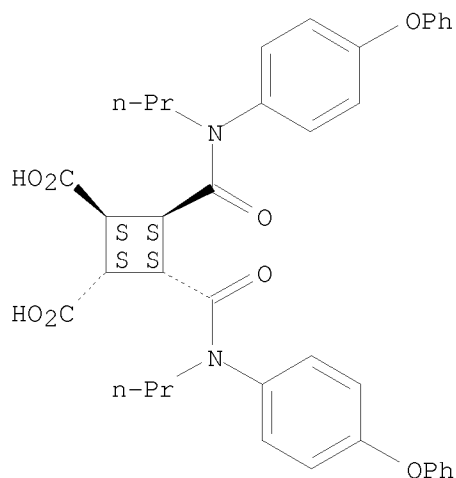
RN 169942-01-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(4-phenoxyphenyl)ethyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-02-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-phenoxyphenyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

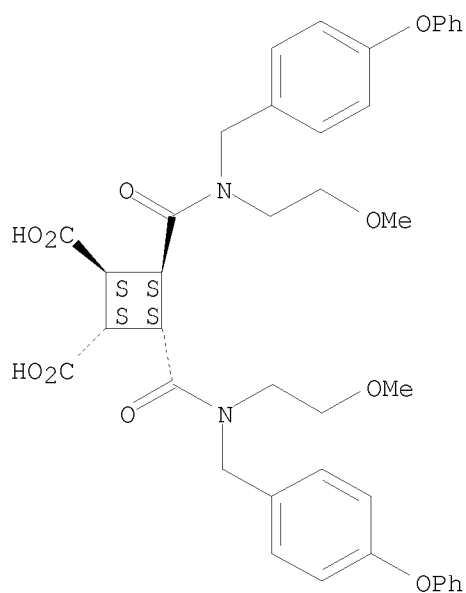
Relative stereochemistry.



RN 169942-03-4 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-methoxyethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

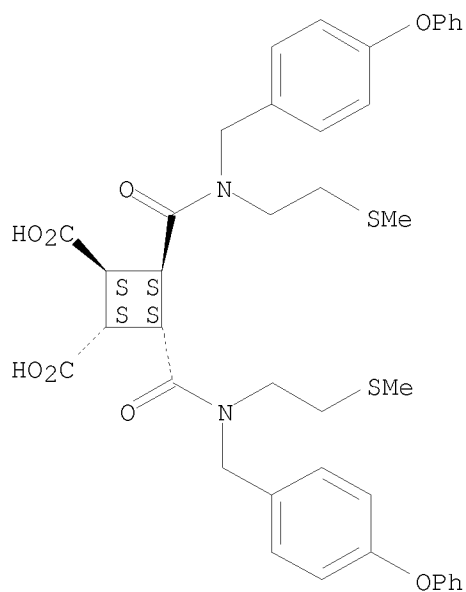




RN 169942-04-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(methylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

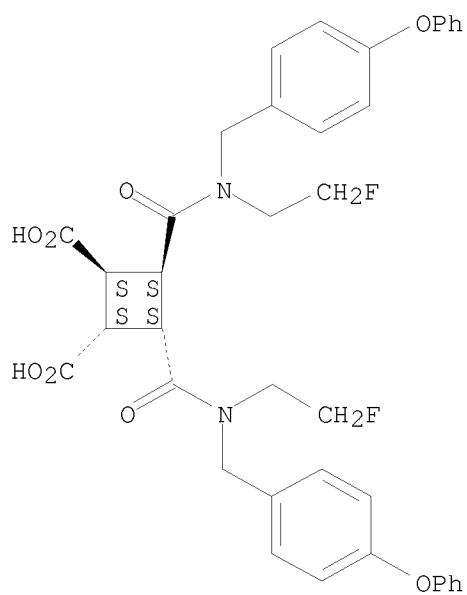
Relative stereochemistry.



RN 169942-05-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(fluoroethyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

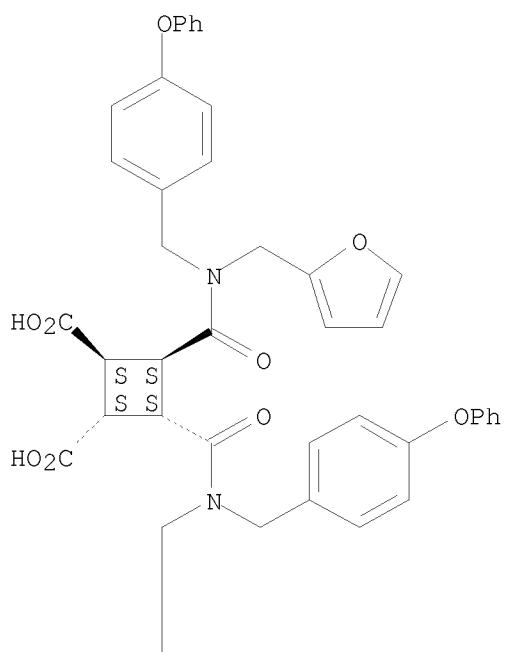
Relative stereochemistry.

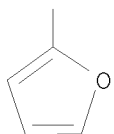


RN 169942-06-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(2-furanylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

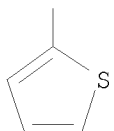
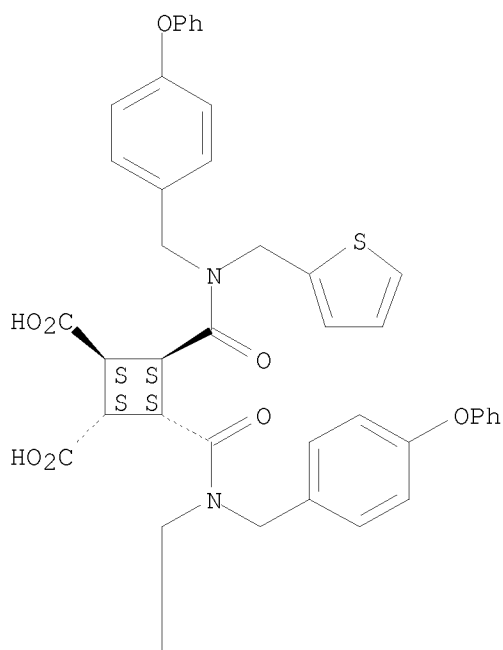
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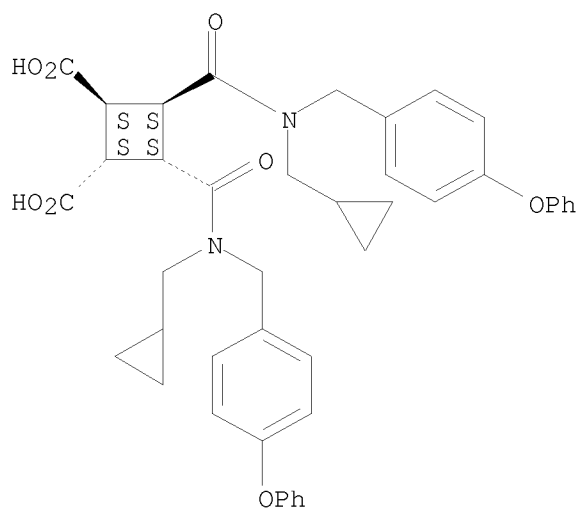
RN 169942-07-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](2-thienylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-08-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclopropylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

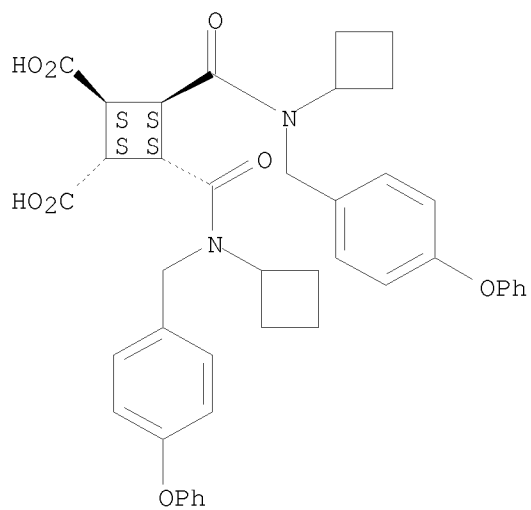
Relative stereochemistry.



RN 169942-09-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclobutyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

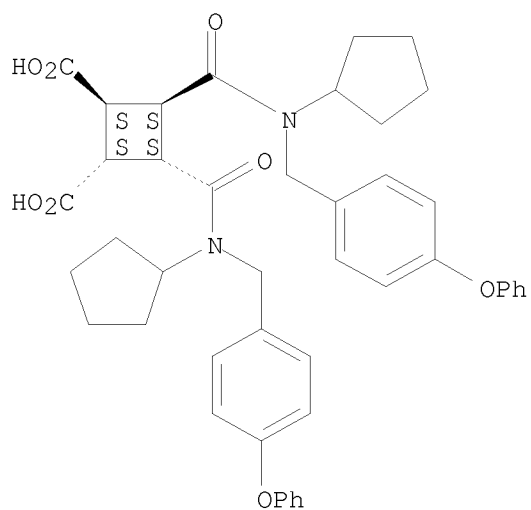
Relative stereochemistry.



RN 169942-10-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopentyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

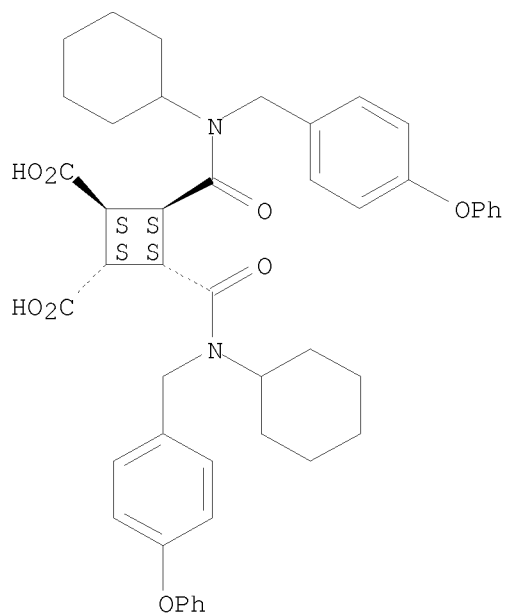
Relative stereochemistry.



RN 169942-11-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclohexyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

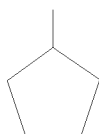
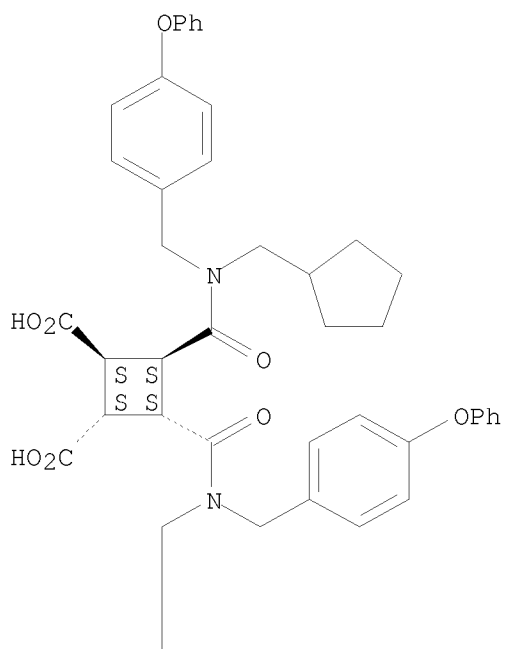
Relative stereochemistry.



RN 169942-12-5 CAPLUS

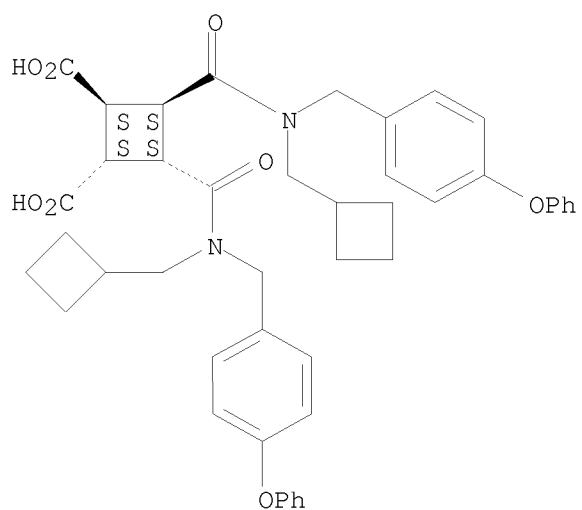
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[cyclopentylmethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-13-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ (cyclobutylmethyl) [(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

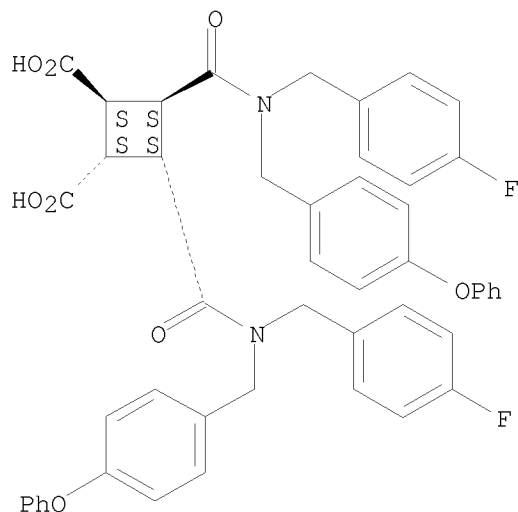
Relative stereochemistry.



RN 169942-14-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-fluorophenyl)methyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

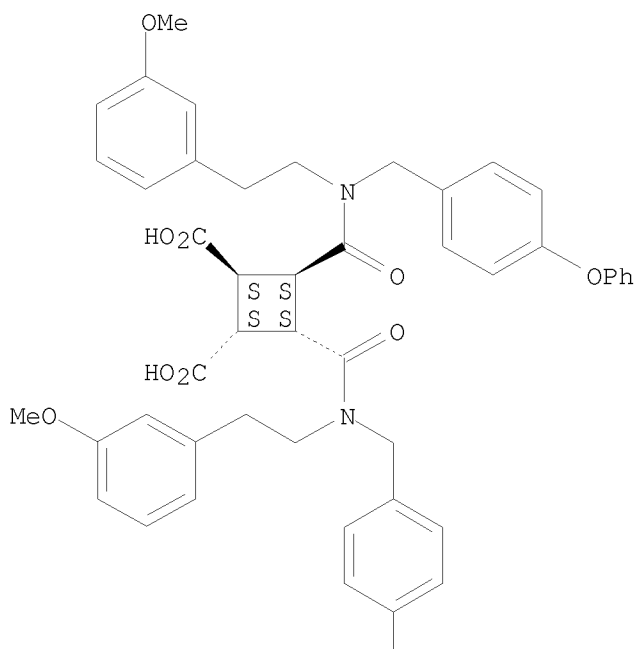


RN 169942-15-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(3-methoxyphenyl)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

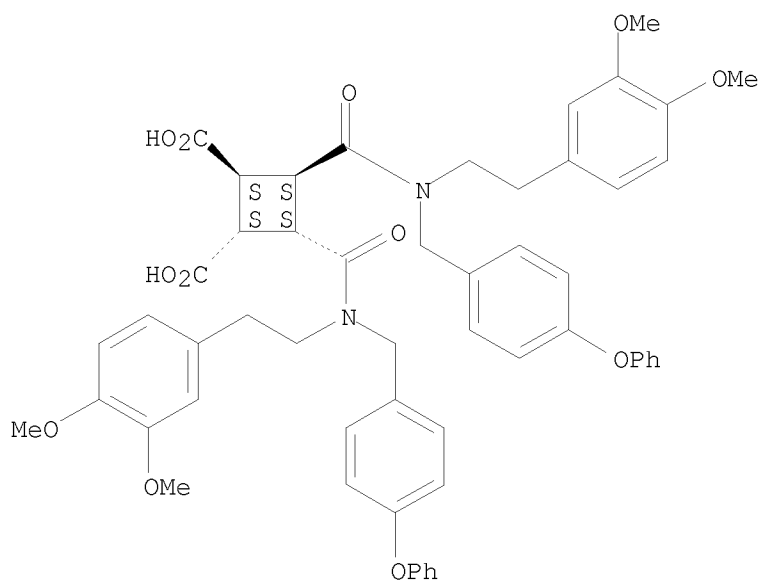
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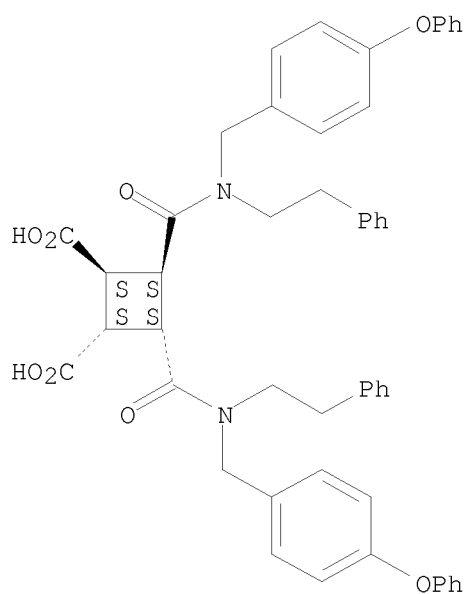
RN 169942-16-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(3,4-dimethoxyphenyl)ethyl][ (4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-17-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl] (2-phenylethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

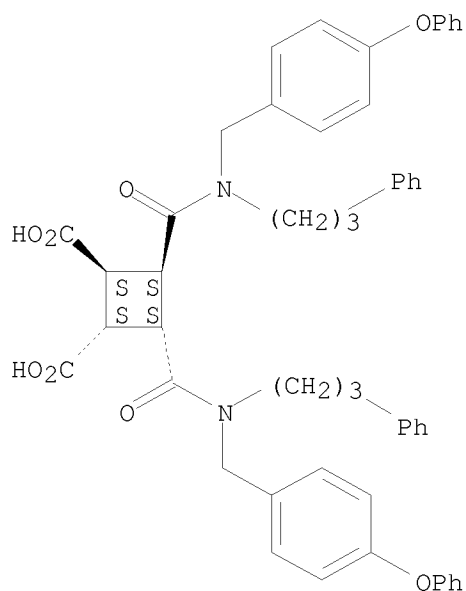




RN 169942-18-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](3-phenylpropyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

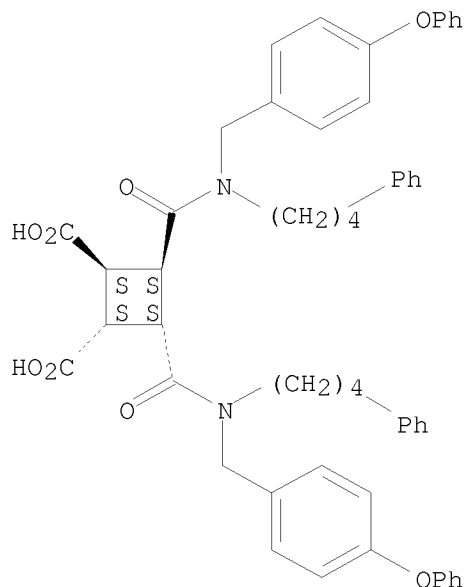
Relative stereochemistry.



RN 169942-19-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl](4-phenylbutyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

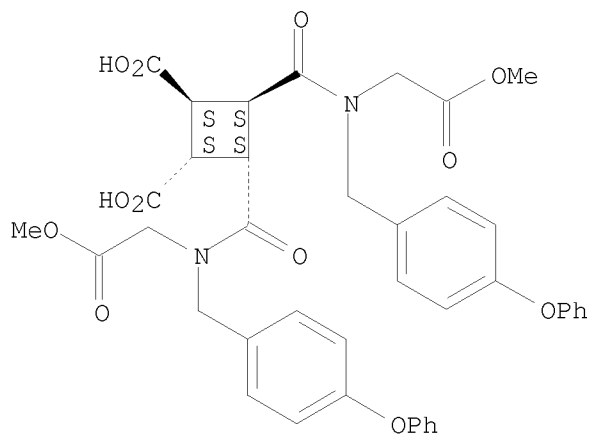
Relative stereochemistry.



RN 169942-20-5 CAPLUS

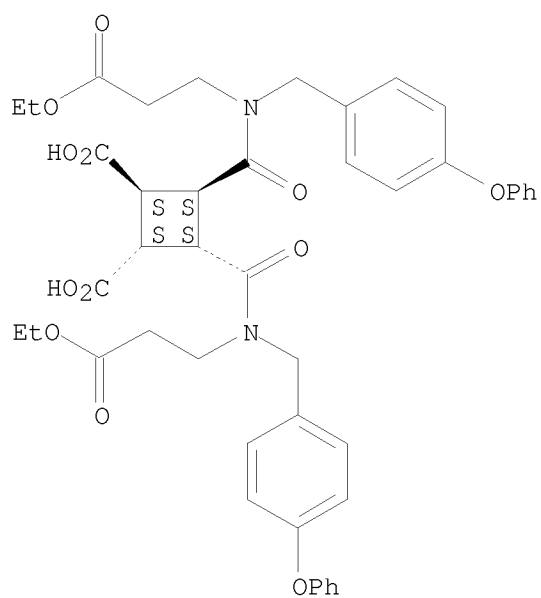
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(2-methoxy-2-oxoethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



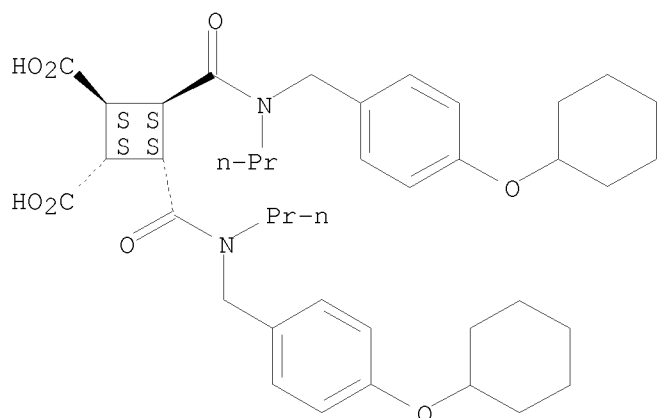
RN 169942-21-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(3-ethoxy-3-oxopropyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-22-7 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-(cyclohexyloxy)phenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

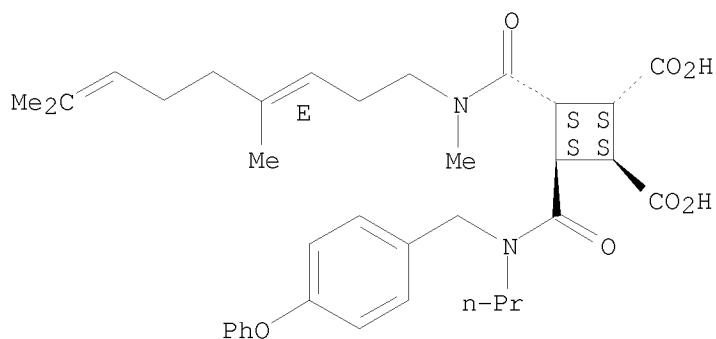
Relative stereochemistry.



RN 169942-23-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(3E)-4,8-dimethyl-3,7-nonadien-1-yl]methylamino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

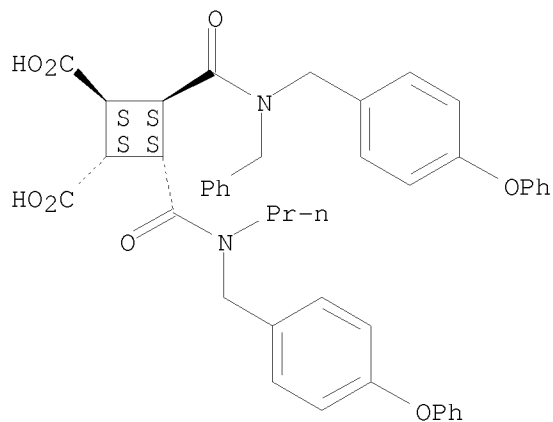
Relative stereochemistry.  
Double bond geometry as shown.



RN 169942-24-9 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(4-phenoxyphenyl)methyl](phenylmethyl)amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

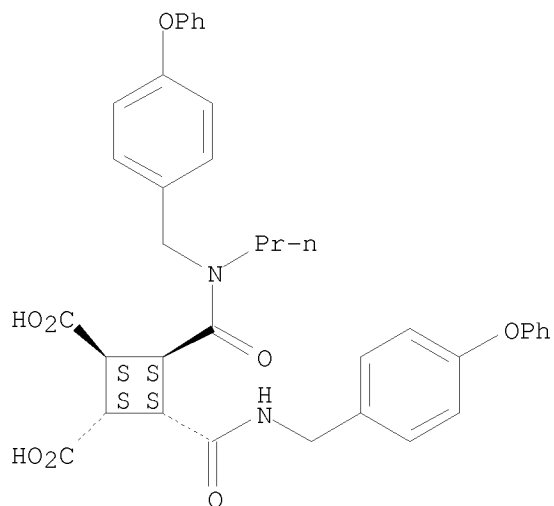
Relative stereochemistry.



RN 169942-25-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3-[[[(4-phenoxyphenyl)methyl]amino]carbonyl]-4-[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

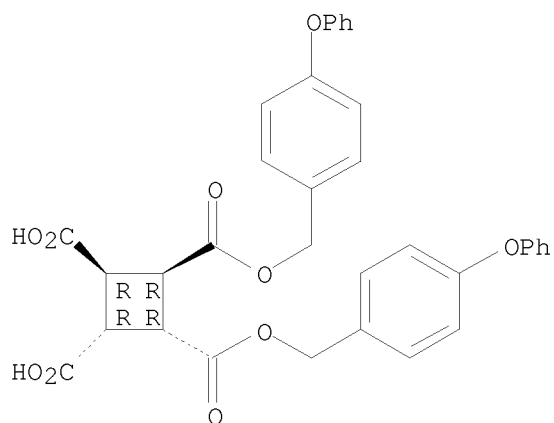
Relative stereochemistry.



RN 169942-26-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-bis[(4-phenoxyphenyl)methyl] ester, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

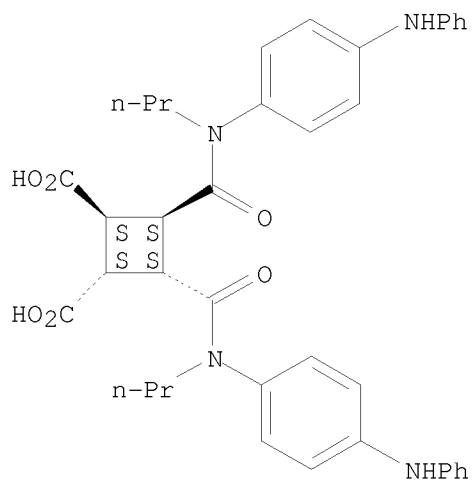
Relative stereochemistry.



RN 169942-27-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylamino)phenyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

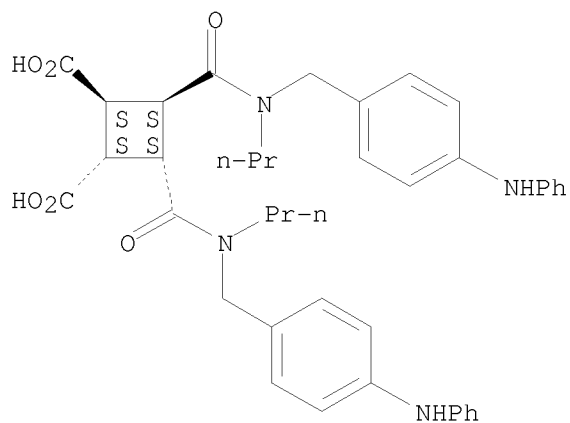
Relative stereochemistry.



RN 169942-28-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylamino)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

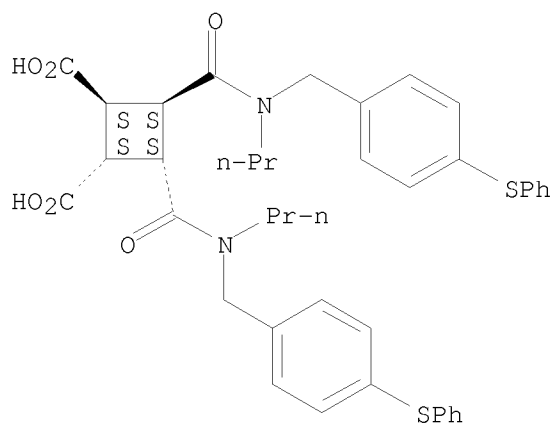
Relative stereochemistry.



RN 169942-29-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenylthio)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

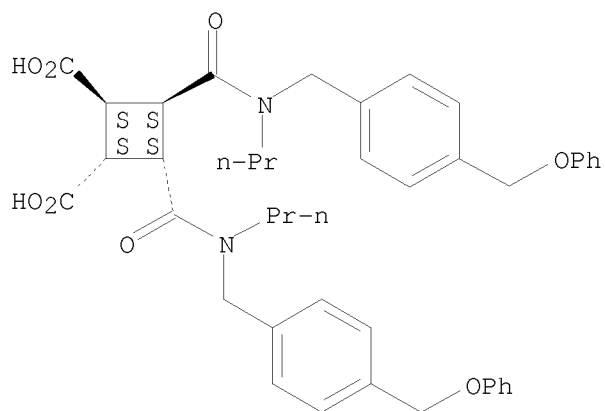
Relative stereochemistry.



RN 169942-30-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(phenoxy)methyl]phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

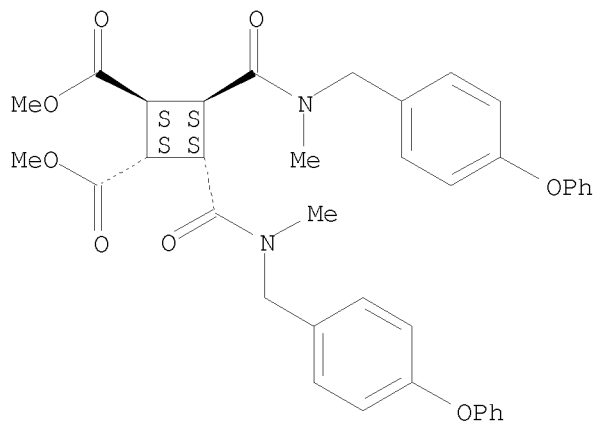
Relative stereochemistry.



RN 169942-41-0 CAPLUS

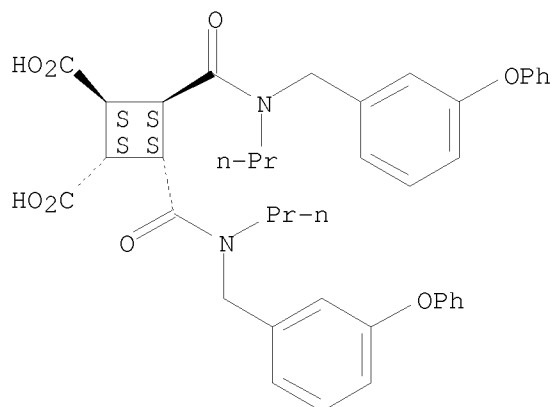
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[methyl[(4-phenoxyphenyl)methyl]amino]carbonyl]-, dimethyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



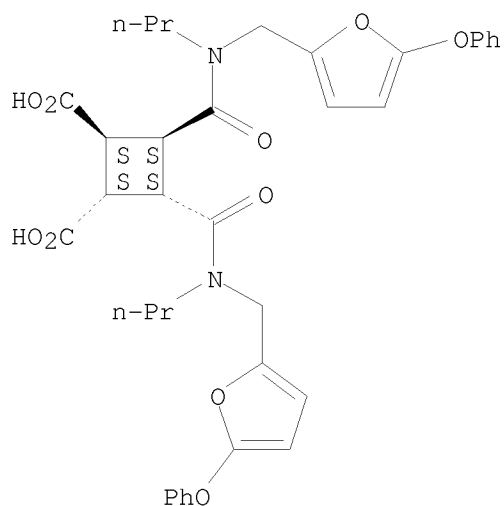
RN 169942-42-1 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(3-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



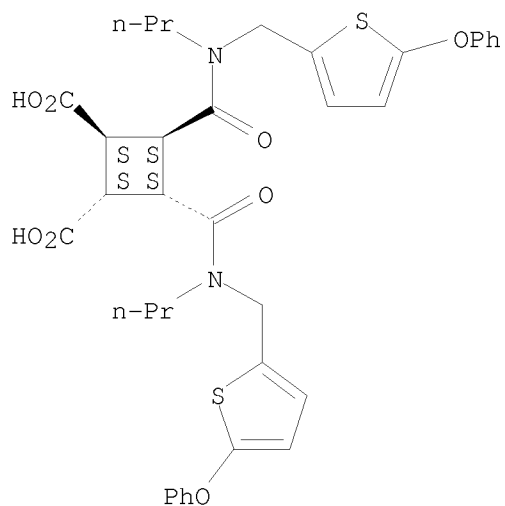
RN 169942-43-2 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(5-phenoxy-2-furanyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-44-3 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(5-phenoxy-2-thienyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

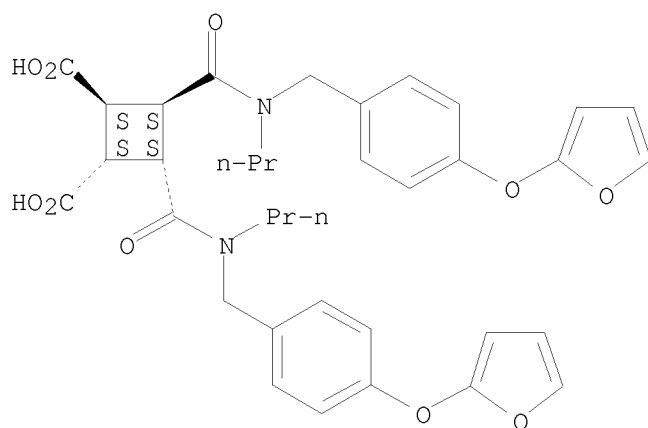
Relative stereochemistry.



RN 169942-45-4 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(2-furanyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

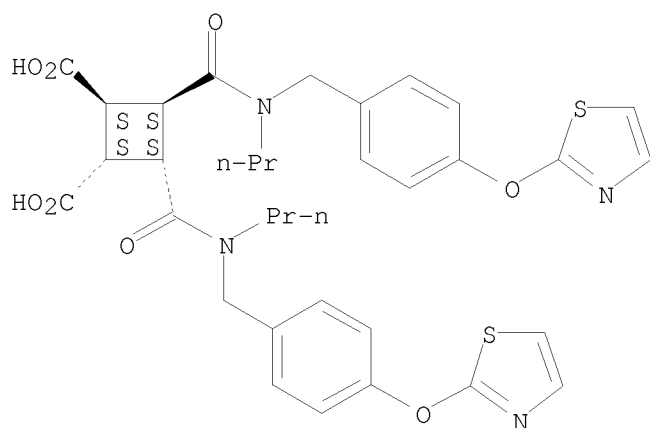


RN 169942-46-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[propyl[[4-(2-thiazolyloxy)phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

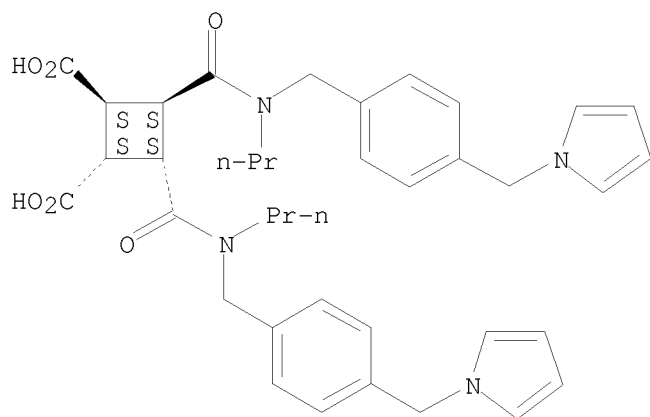




RN 169942-47-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[propyl[[4-(1H-pyrrol-1-yl)methyl]phenyl]methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

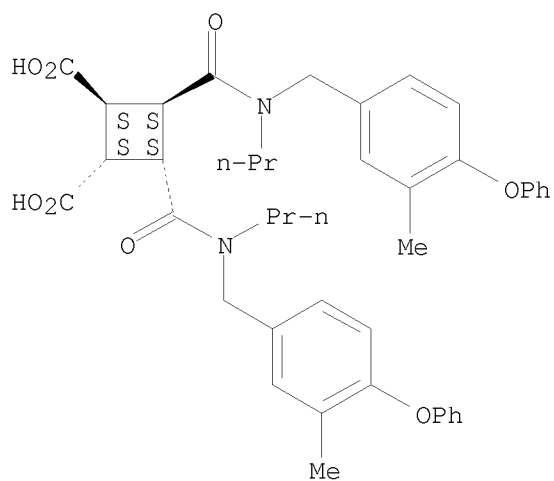
Relative stereochemistry.



RN 169942-48-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[3-methyl-4-phenoxyphenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

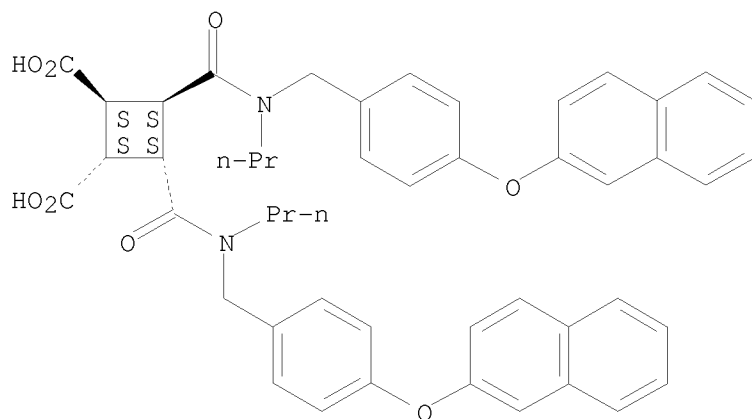
Relative stereochemistry.



RN 169942-49-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(2-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

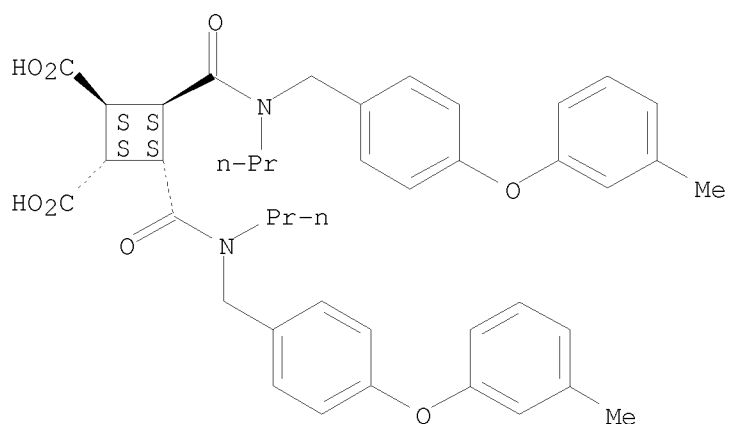
Relative stereochemistry.



RN 169942-50-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(3-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

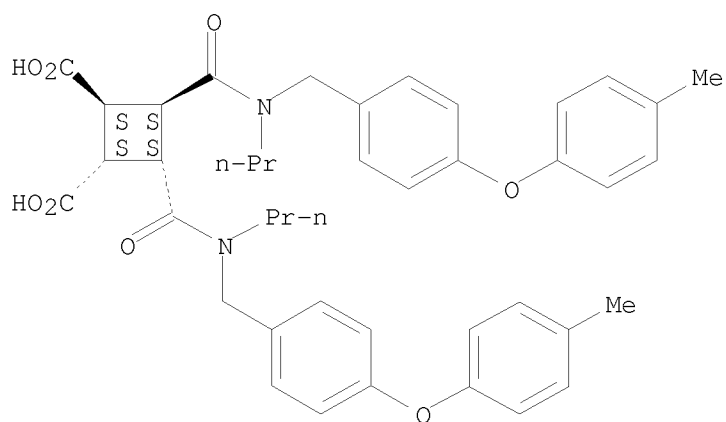
Relative stereochemistry.



RN 169942-51-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(4-methylphenoxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

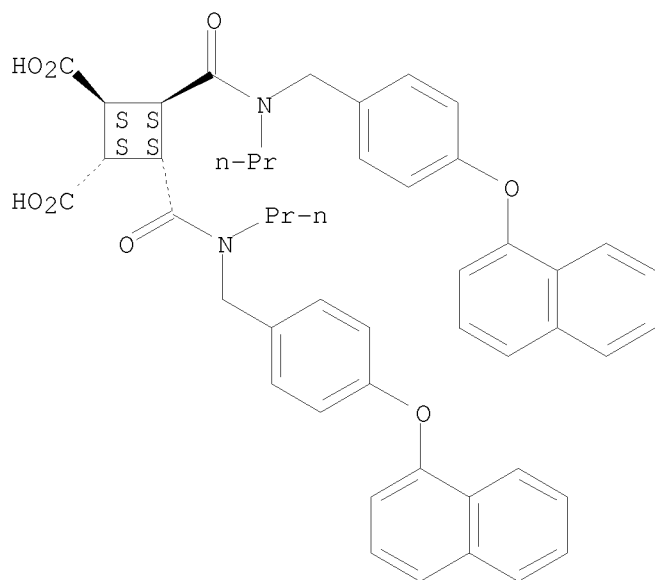
Relative stereochemistry.



RN 169942-52-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[4-(1-naphthalenyloxy)phenyl]methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

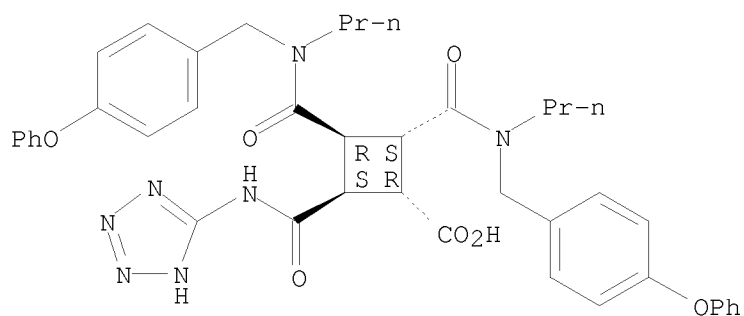
Relative stereochemistry.



RN 169942-53-4 CAPLUS

CN Cyclobutanecarboxylic acid, 2,3-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-4-[(1H-tetrazol-5-ylamino)carbonyl]-, (1R,2S,3R,4S)-rel- (9CI) (CA INDEX NAME)

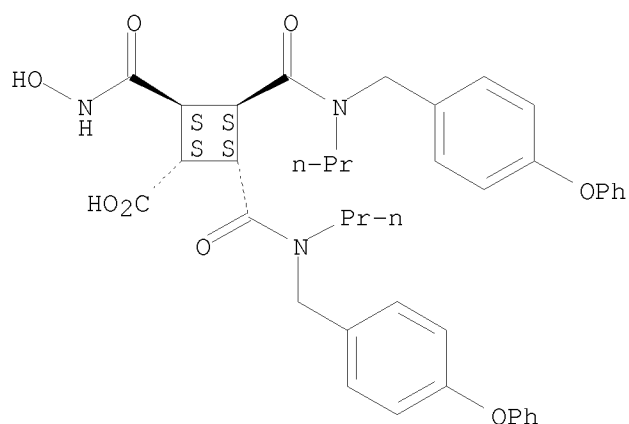
Relative stereochemistry.



RN 169942-57-8 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[(hydroxyamino)carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

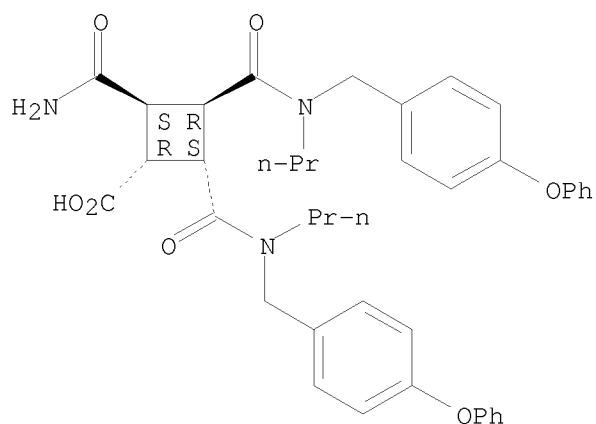
Relative stereochemistry.



RN 169942-58-9 CAPLUS

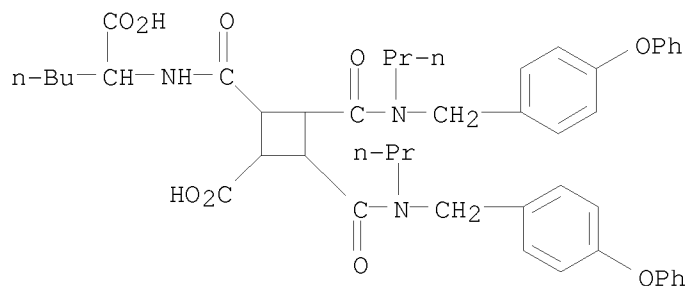
CN Cyclobutanecarboxylic acid, 2-(aminocarbonyl)-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 169942-63-6 CAPLUS

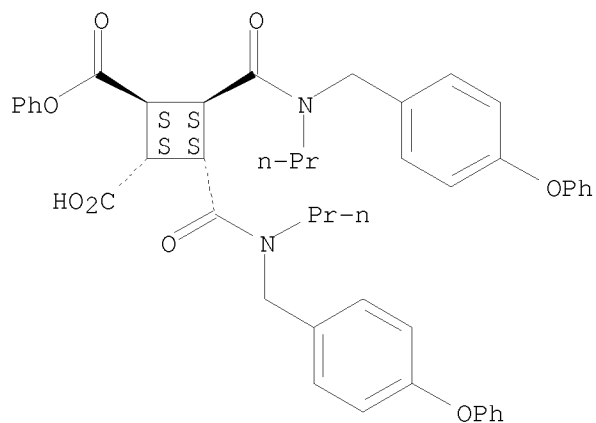
CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxypentyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)



RN 169942-64-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, monophenyl ester, (1R,2R,3R,4R)-rel- (9CI) (CA INDEX NAME)

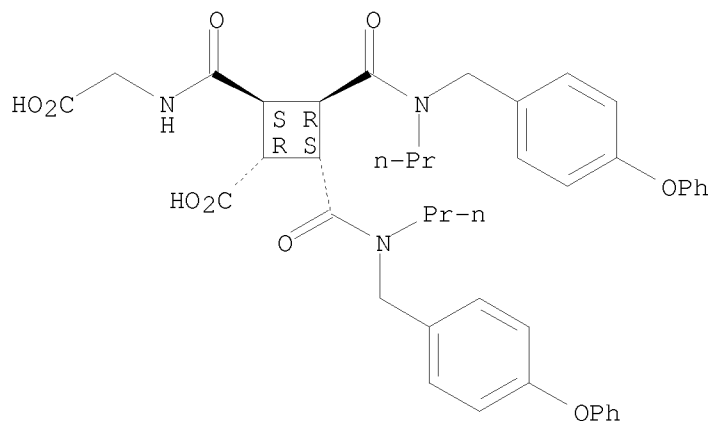
Relative stereochemistry.



RN 169942-65-8 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(carboxymethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

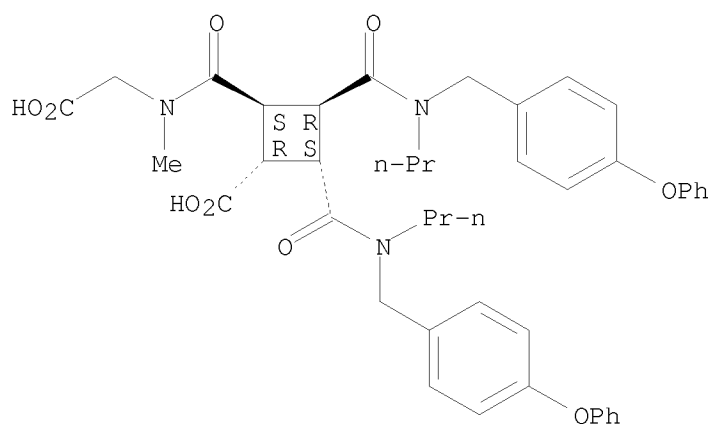
Relative stereochemistry.



RN 169942-67-0 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(carboxymethyl)methylamino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

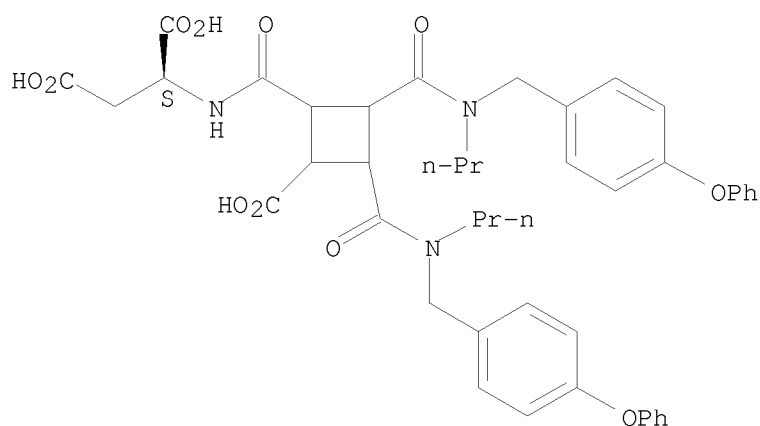
Relative stereochemistry.



RN 169942-68-1 CAPLUS

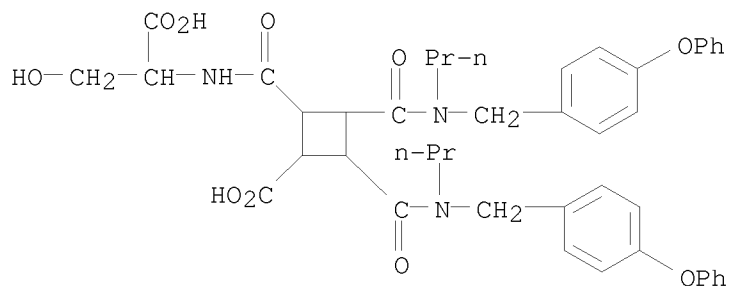
CN L-Aspartic acid, N-[[[2-carboxy-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]cyclobutyl]carbonyl]- (CA INDEX NAME)

Absolute stereochemistry.



RN 169942-69-2 CAPLUS

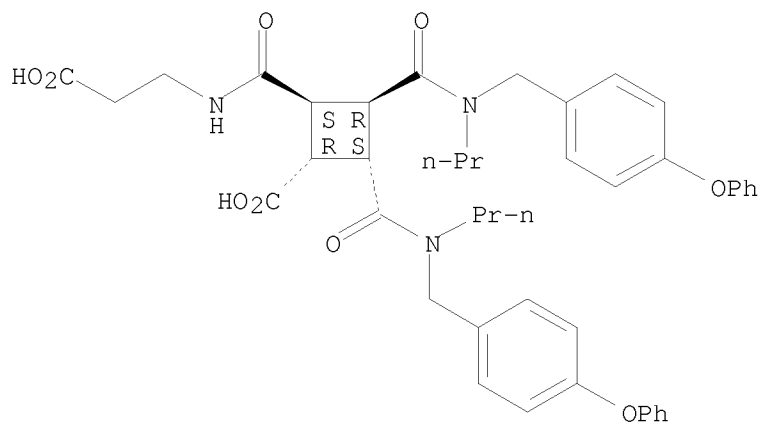
CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxy-2-hydroxyethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)



RN 169942-70-5 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[(2-carboxyethyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

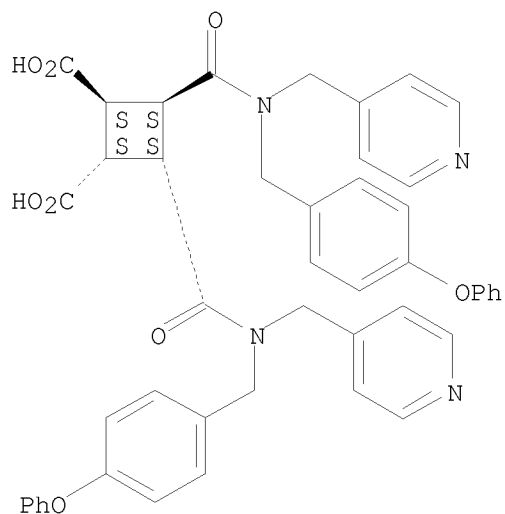
Relative stereochemistry.



RN 169942-71-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl](4-pyridinylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

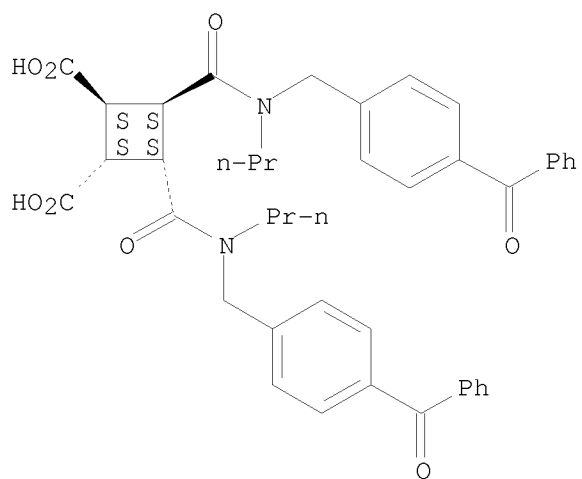


RN 169942-72-7 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-benzoylphenyl)methyl](4-pyridinylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

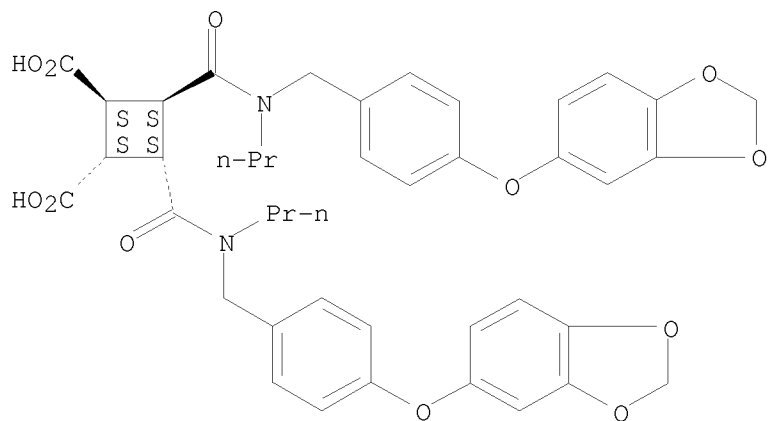




RN 169942-73-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[4-(1,3-benzodioxol-5-yloxy)phenyl]methylpropylamino carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

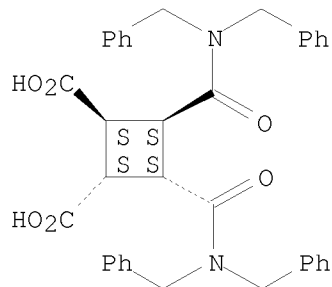
Relative stereochemistry.



RN 169942-75-0 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[bis(phenylmethyl)amino]carbonyl-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

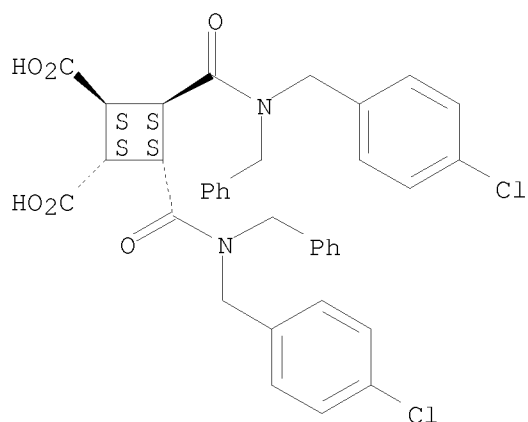
Relative stereochemistry.



RN 169942-76-1 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-chlorophenyl)methyl](phenylmethyl)amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

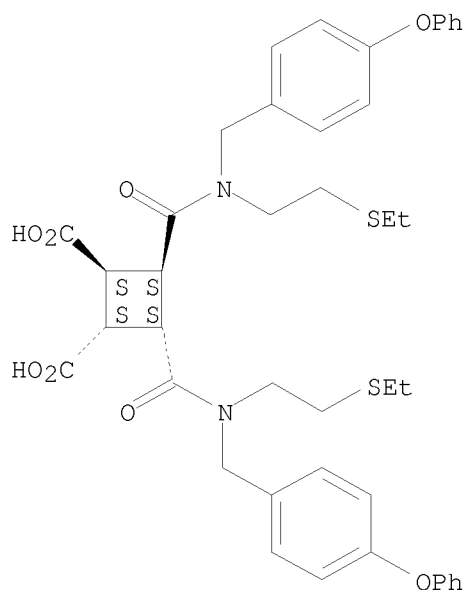
Relative stereochemistry.



RN 169942-82-9 CAPLUS

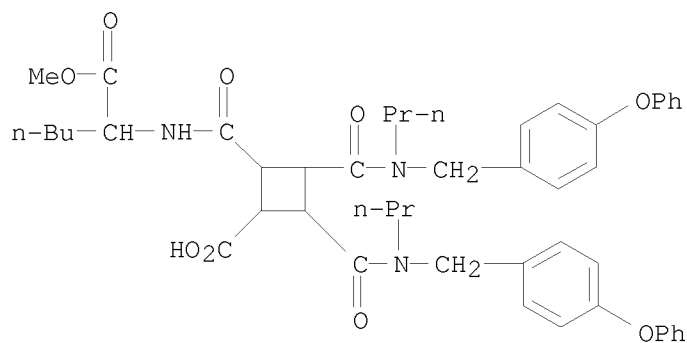
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[2-(ethylthio)ethyl][(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel- (CA INDEX NAME)

Relative stereochemistry.

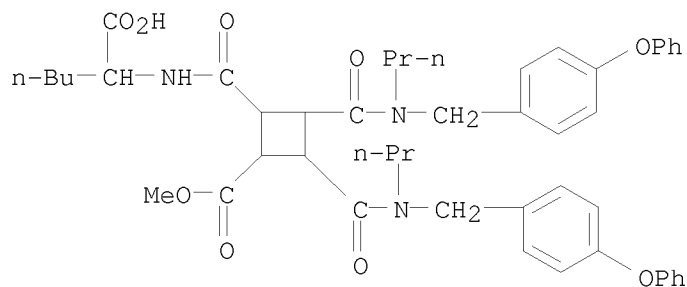


RN 169944-08-5 CAPLUS

CN Cyclobutanecarboxylic acid, 2-[[[1-(methoxycarbonyl)pentyl]amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]- (CA INDEX NAME)

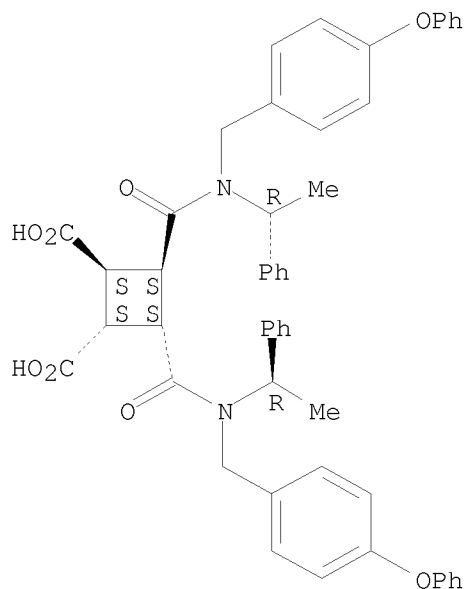


RN 169944-09-6 CAPLUS  
 CN Cyclobutanecarboxylic acid, 2-[[[(1-carboxypentyl)amino]carbonyl]-3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, 1-methyl ester (CA INDEX NAME)



RN 170207-64-4 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl][(1R)-1-phenylethyl]amino]carbonyl]-, (1S,2S,3S,4S)- (CA INDEX NAME)

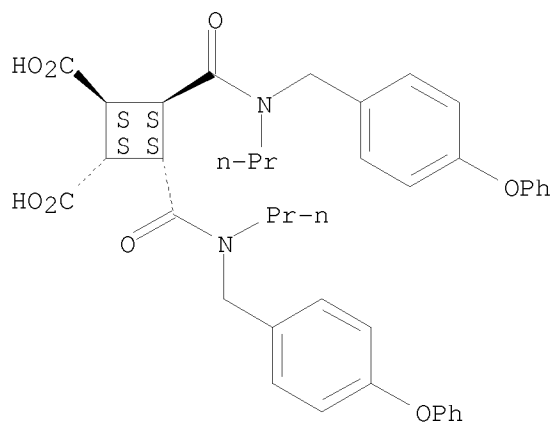
Absolute stereochemistry.



RN 170207-65-5 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-

phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4R)-rel-(-)- (9CI)  
(CA INDEX NAME)

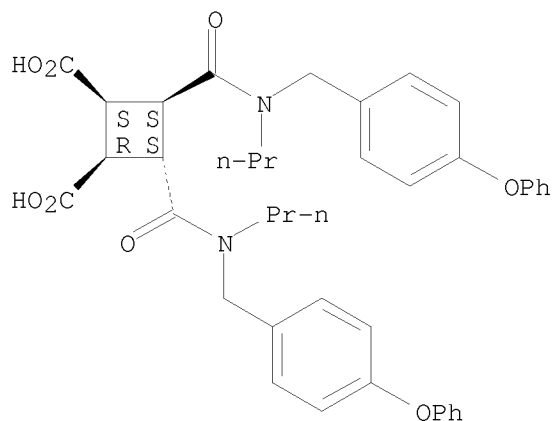
Rotation (-). Absolute stereochemistry unknown.



RN 170207-66-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4R)-rel- (9CI) (CA INDEX NAME)

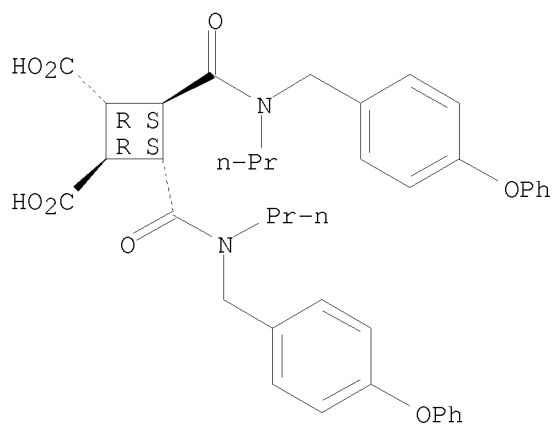
Relative stereochemistry.



RN 170207-67-7 CAPLUS

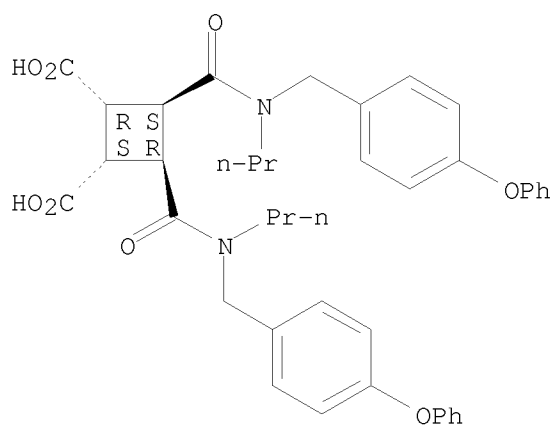
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3S,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



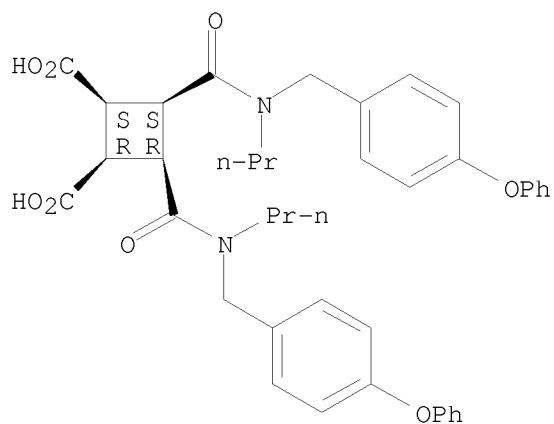
RN 170207-68-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3R,4S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 170207-69-9 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2S,3S,4R)-rel- (CA INDEX NAME)

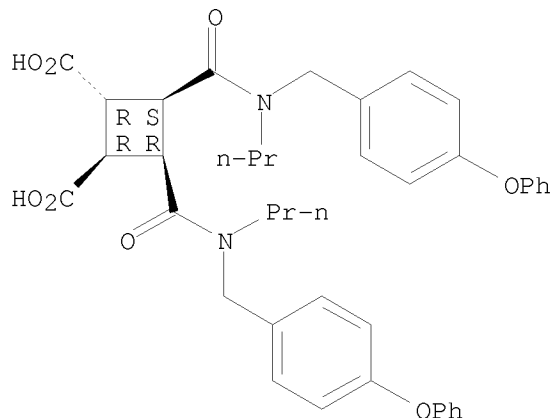
Relative stereochemistry.



RN 170207-70-2 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl]propylamino]carbonyl]-, (1R,2R,3R,4S)-rel- (CA INDEX NAME)

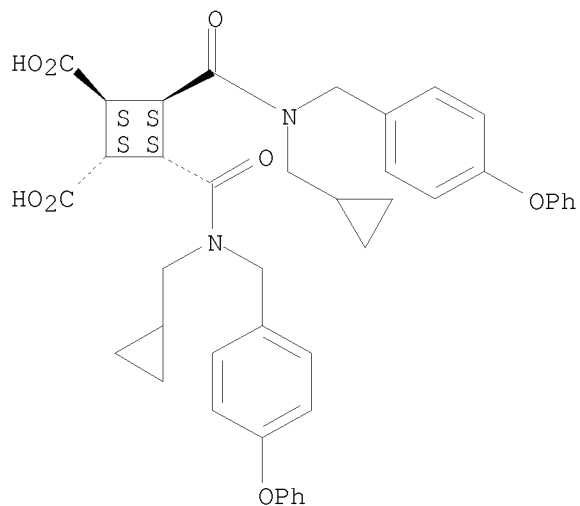
Relative stereochemistry.



RN 170207-71-3 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(cyclopropylmethyl)[(4-phenoxyphenyl)methyl]amino]carbonyl]-, (1R,2R,3R,4R)-rel-(-)- (9CI) (CA INDEX NAME)

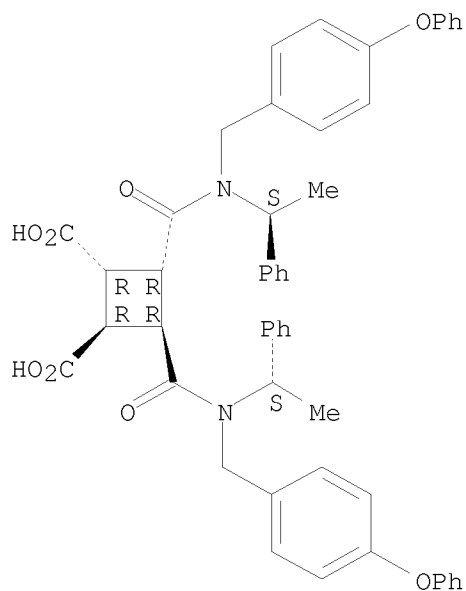
Rotation (-). Absolute stereochemistry unknown.



RN 170207-73-5 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[[(4-phenoxyphenyl)methyl][(1S)-1-phenylethyl]amino]carbonyl]-, (1R,2R,3R,4R)- (CA INDEX NAME)

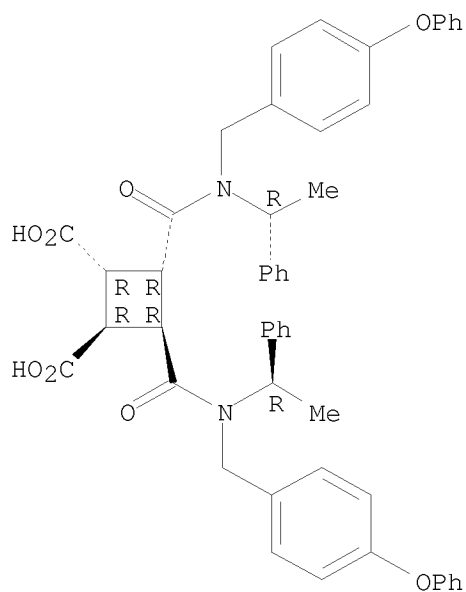
Absolute stereochemistry.



RN 170207-74-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[(4-phenoxyphenyl)methyl][(1R)-1-phenylethyl]amino]carbonyl]-, (1R,2R,3R,4R)- (CA INDEX NAME)

Absolute stereochemistry.



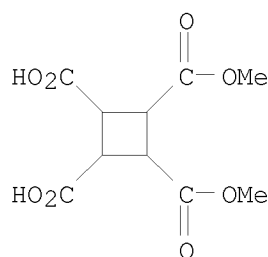
IT 91109-83-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; preparation of cyclobutane derivs. as inhibitors of squalene synthetase and protein farnesyltransferase)

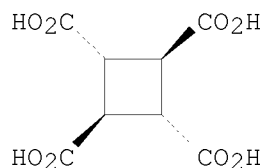
RN 91109-83-0 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester (CA INDEX NAME)



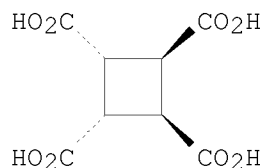
L4 ANSWER 72 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1995:232280 CAPLUS  
 DOCUMENT NUMBER: 122:81037  
 ORIGINAL REFERENCE NO.: 122:15395a,15398a  
 TITLE: Reactions of cycloalkanecarboxylic acids with SF<sub>4</sub>.  
 III. Fluorination of cyclobutane- and  
 cyclopentane-tetracarboxylic acids with SF<sub>4</sub>  
 AUTHOR(S): Pustovit, Yu. M.; Ogojko, P. I.; Nazaretian, V. P.  
 CORPORATE SOURCE: The Ukrainian Academy of Sciences, Institute of  
 Organic Chemistry, Kiev, 252094, Ukraine  
 SOURCE: Journal of Fluorine Chemistry (1994), 69(3), 237-40  
 CODEN: JFLCAR; ISSN: 0022-1139  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 122:81037  
 AB Fluorination of cyclobutane- and cyclopentane-polycarboxylic acids having  
 carboxylic groups in cis positions with SF<sub>4</sub> yields mainly cyclization  
 products, i.e. cyclic  $\alpha,\alpha,\alpha',\alpha'$ -tetrafluoroethers.  
 1,3-Cyclization was observed during fluorination of  
 cyclopentanetetracarboxylic acids.  
 IT 720-21-8 38841-00-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (fluorination with SF<sub>4</sub>)  
 RN 720-21-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 38841-00-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.





L4 ANSWER 73 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:272652 CAPLUS  
DOCUMENT NUMBER: 120:272652  
ORIGINAL REFERENCE NO.: 120:48271a,48274a  
TITLE: Composite reverse osmosis membranes  
INVENTOR(S): Hachisuga, Hisao; Shimizu, Mitsuru; Hirose, Masahiko;  
Kihara, Yasuo; Maeda, Masatoshi; Nakazono, Yutaka;  
Kojima, Katsuhide; Ikehata, Hisashi; Matsumoto, Kenji  
PATENT ASSIGNEE(S): Nitto Denko Corp, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05317670	A	19931203	JP 1992-152848	19920519

PRIORITY APPLN. INFO.: JP 1992-152848 19920519

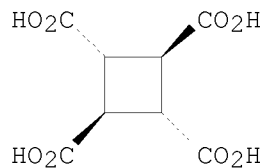
AB The title membranes showing high salt rejection and water flux in low-pressure operation and good chlorine resistance comprise a microporous support and a thin film from polymers of non-synperiplanar polycarboxylic acid halides and compds. having  $\geq 2$  of NHR (R = H, C1-4 alkyl), SH and OH groups. A polysulfone ultrafiltration membrane was coated with an aqueous soln containing m-phenylenediamine 2.0, triethylamine 2.0, camphorsulfonic acid 4.0, and Na dodecyl sulfate 0.25%, then contacted with a hexane solution containing 0.20% cyclopentane-1 $\alpha$ ,2 $\beta$ ,4 $\alpha$ -tricarboxyl chloride to obtain a membrane with salt rejection 99.6% and water flux 0.5 ton/m<sup>2</sup>-day for water containing 1500 ppm NaCl at pH 6.5 under 15 kg/cm<sup>2</sup> pressure at 25°.

IT 720-21-8 7376-00-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with thionyl chloride)

RN 720-21-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

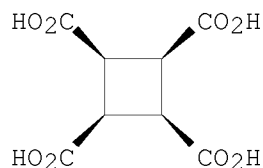
Relative stereochemistry.



RN 7376-00-3 CAPLUS

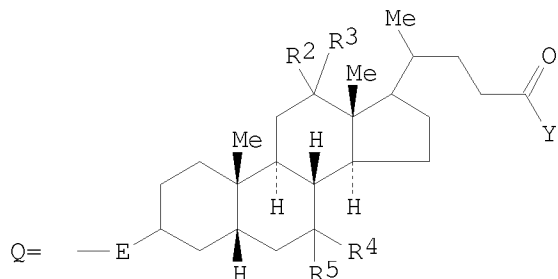
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ )- (CA INDEX NAME)

Relative stereochemistry.



ACCESSION NUMBER: 1994:192086 CAPLUS  
 DOCUMENT NUMBER: 120:192086  
 ORIGINAL REFERENCE NO.: 120:34019a,34022a  
 TITLE: Preparation of bile acid derivatives as hypolipemics  
 INVENTOR(S): Enhnsen, Alfons; Glombik, Heiner; Kramer, Werner; Wess, Guenther  
 PATENT ASSIGNEE(S): Hoechst A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 32 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 573848	A2	19931215	EP 1993-108559	19930527
EP 573848	B1	19971203		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
AT 160783	T	19971215	AT 1993-108559	19930527
ES 2111092	T3	19980301	ES 1993-108559	19930527
US 5428182	A	19950627	US 1993-74753	19930610
IL 105980	A	19971120	IL 1993-105980	19930610
CZ 285104	B6	19990512	CZ 1993-1134	19930610
SK 280819	B6	20000814	SK 1993-585	19930610
FI 106801	B1	20010412	FI 1993-2659	19930610
CA 2098256	A1	19931213	CA 1993-2098256	19930611
CA 2098256	C	20040824		
NO 9302159	A	19931213	NO 1993-2159	19930611
AU 9340180	A	19931216	AU 1993-40180	19930611
AU 663592	B2	19951012		
ZA 9304150	A	19940113	ZA 1993-4150	19930611
HU 64772	A2	19940228	HU 1993-1716	19930611
HU 216636	B	19990728		
JP 06087884	A	19940329	JP 1993-140375	19930611
JP 3403218	B2	20030506		
PRIORITY APPLN. INFO.:			DE 1992-4219274	A 19920612
OTHER SOURCE(S):	MARPAT	120:192086		
GI				



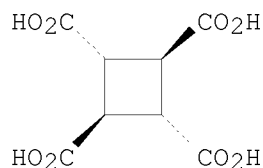
AB Z(XG)<sub>n</sub> (G = bile acid residue, e.g., Q; E = bond, O, NH; R<sub>2</sub>-R<sub>5</sub> = H, OH, alkoxy, NH<sub>2</sub>, alkanoyloxy, etc.; X = bond, bridging group; Y = OH, alkoxy, NH<sub>2</sub>, etc.; Z = n-valent group; n = 3 or 4) were prepared. Thus, MeC(CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>COR<sub>7</sub>)<sub>3</sub> (I; R<sub>7</sub> = OH) was condensed with RCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> (R = Q; E = β-O, R<sub>2</sub> = R<sub>4</sub> = α-OH, R<sub>3</sub> = R<sub>5</sub> = H, Y = OR<sub>6</sub>) (Q1; R<sub>6</sub> = Me) to

give, after saponification, I (R7 = NHCH2CH2Q1; R6 = H) which had IC50 0.24 that of taurochenodesoxycholate for inhibition of taurocholate uptake by rabbit ileal vesicles in vitro.

IT 720-21-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, in preparation of hypolipemic)

RN 720-21-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

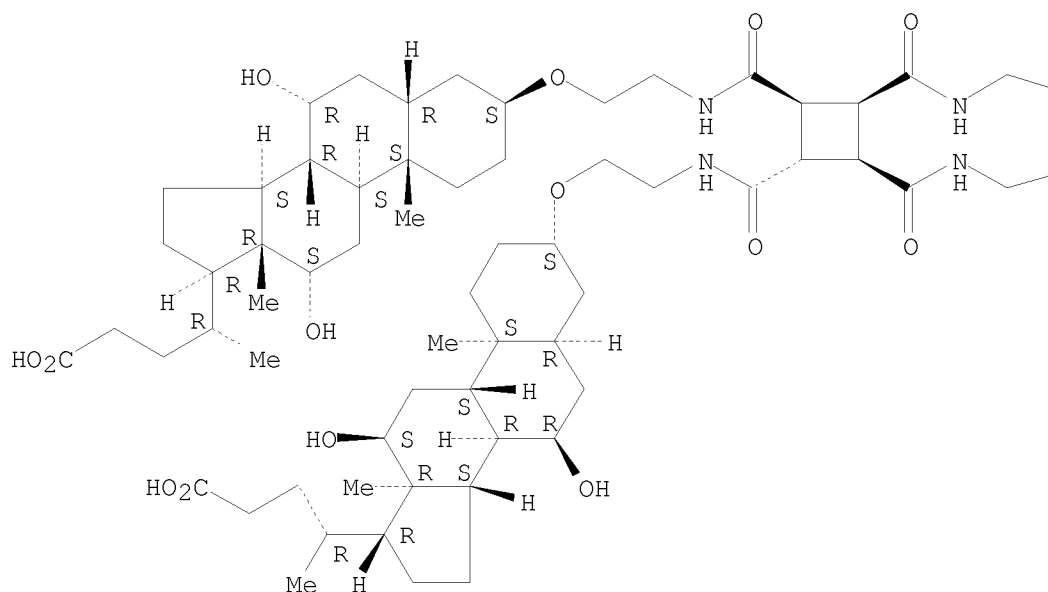


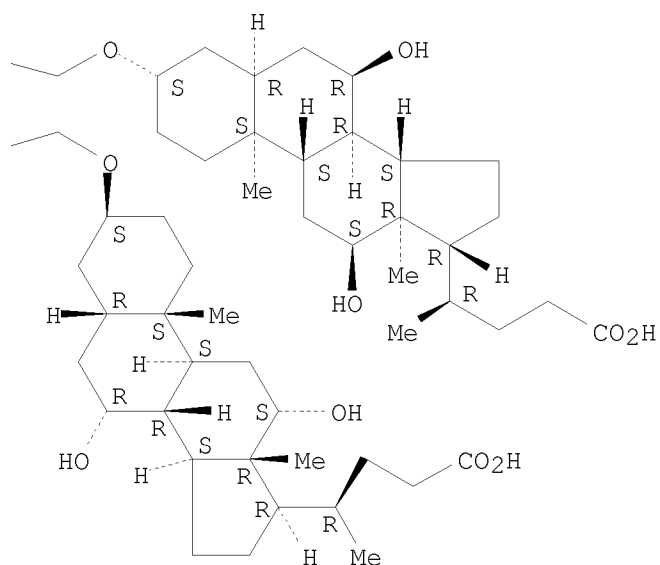
IT 153583-14-3P 153583-15-4P 153665-91-9P  
 153665-92-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as hypolipemic)

RN 153583-14-3 CAPLUS  
 CN Cholan-24-oic acid, 3,3',3'',3'''-[1,2,3,4-cyclobutanetetrayltetrakis(carbonylimino-2,1-ethanedioxy)]tetrakis[7,12-dihydroxy-, stereoisomer (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

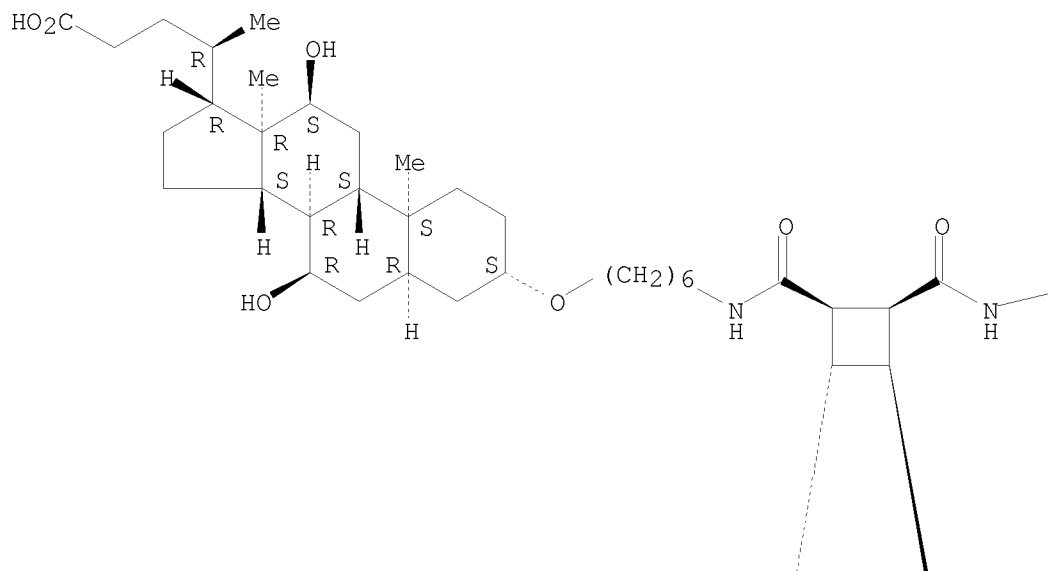


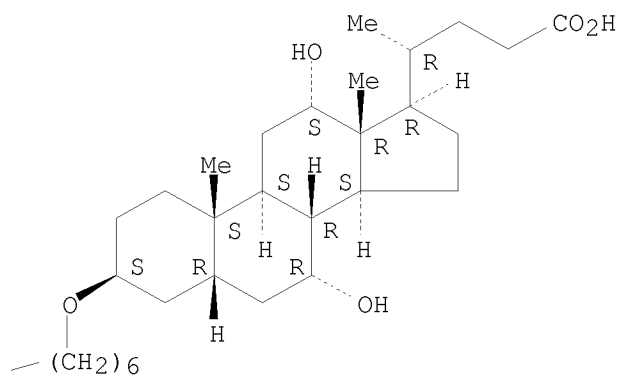


RN 153583-15-4 CAPLUS

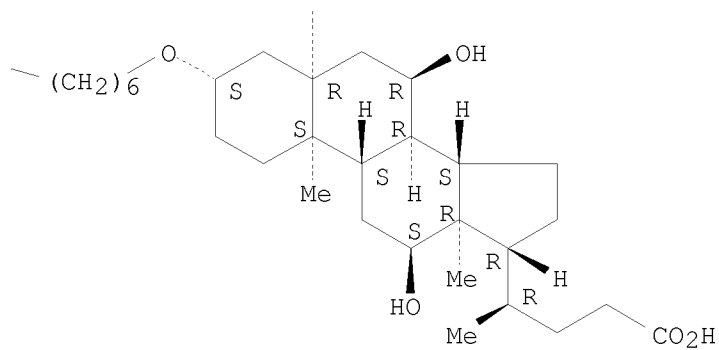
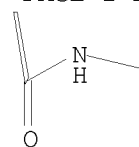
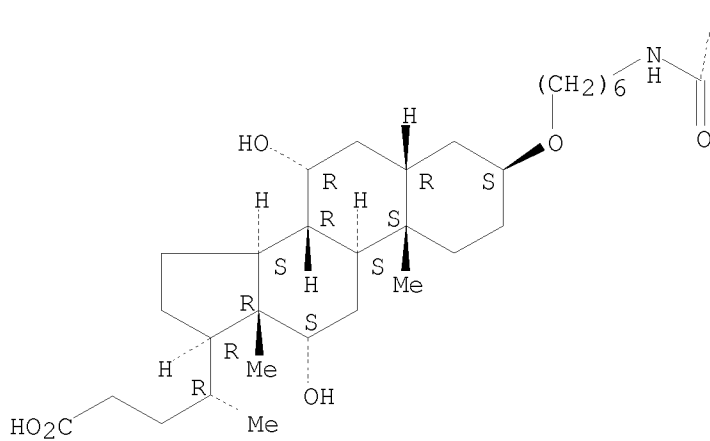
CN Cholan-24-oic acid, 3,3',3'',3'''-[1,2,3,4-cyclobutanetetrayltetrakis(carbonylimino-6,1-hexanediylloxy)]tetrakis[7,12-dihydroxy-, stereoisomer (9CI) (CA INDEX NAME)

Absolute stereochemistry.





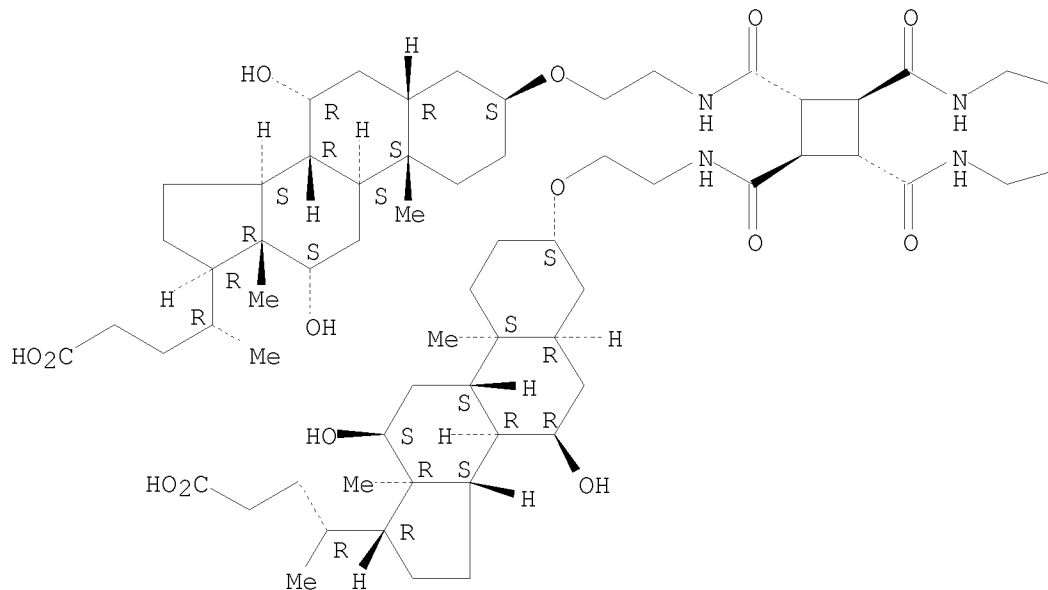
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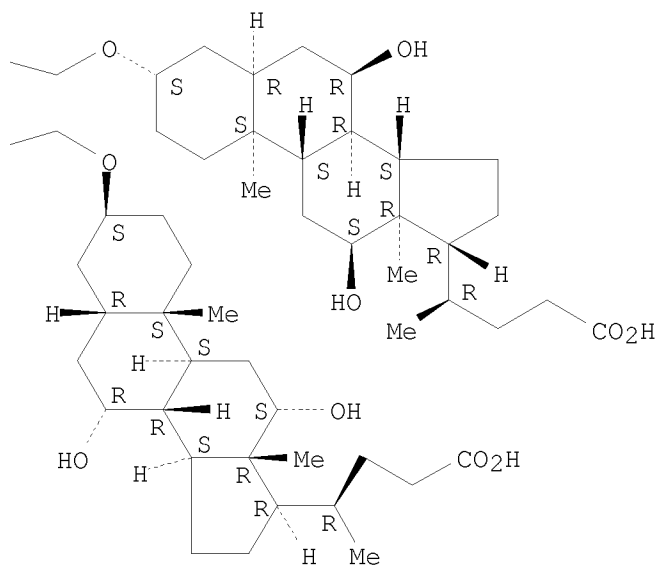
RN 153665-91-9 CAPLUS  
 CN Cholan-24-oic acid, 3,3',3'',3'''-[1,2,3,4-cyclobutanetetrayltetrakis(carbonylimino-2,1-ethanediyloxy)]tetrakis[7,12-dihydroxy-, stereoisomer (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



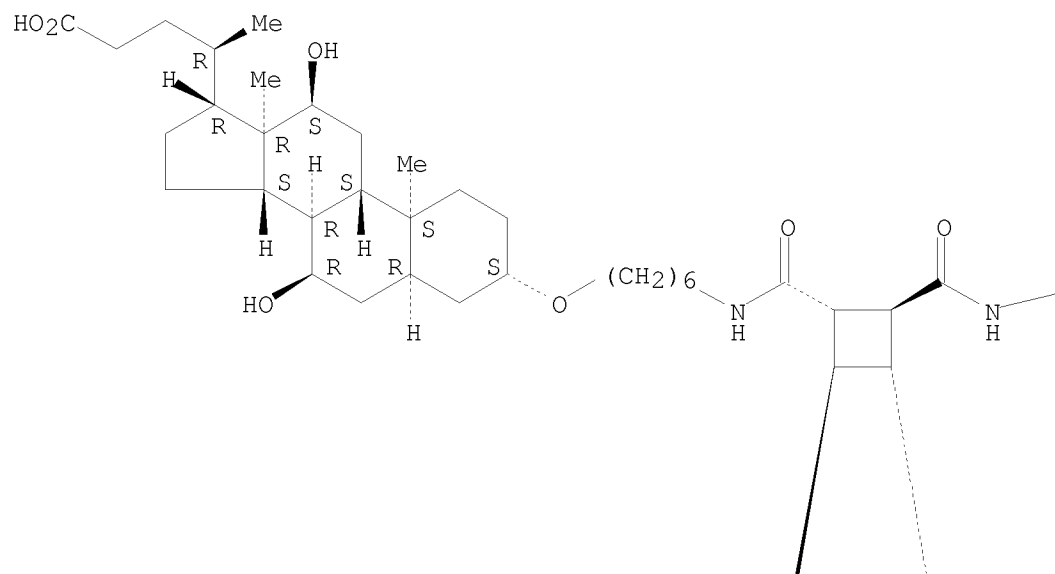
PAGE 1-B



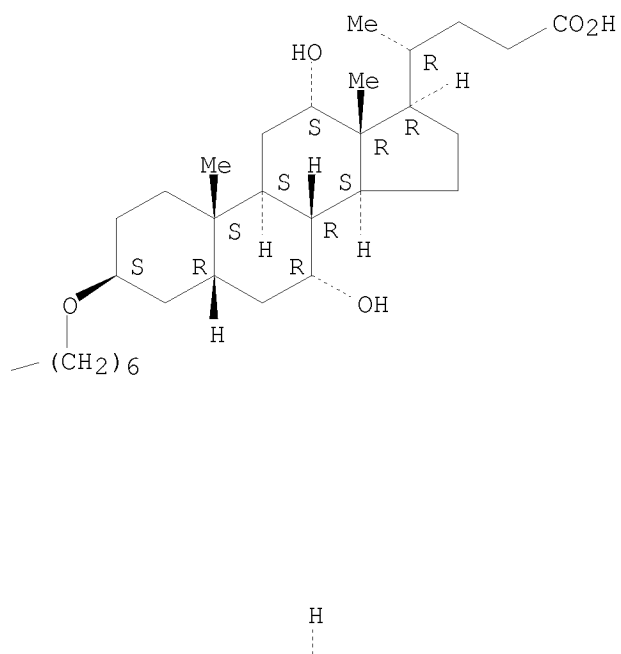
RN 153665-92-0 CAPLUS  
 CN Cholan-24-oic acid, 3,3',3'',3'''-[1,2,3,4-cyclobutanetetrayltetrakis(carbonylimino-6,1-hexanediyloxy)]tetrakis[7,12-dihydroxy-, stereoisomer (9CI) (CA INDEX NAME)

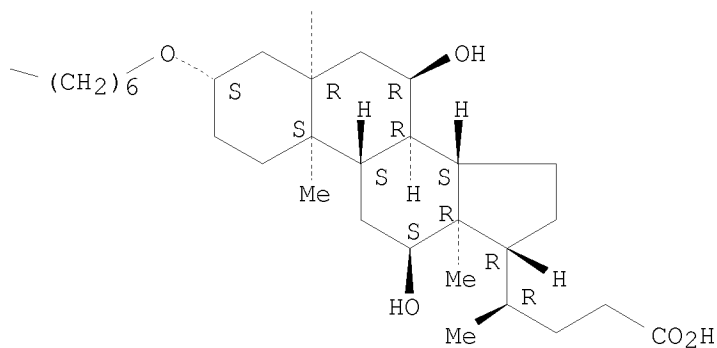
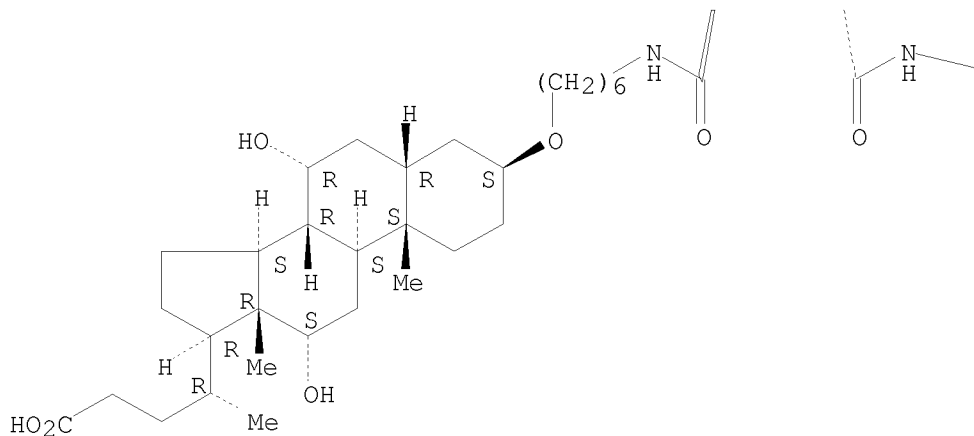
Absolute stereochemistry.

PAGE 1-A



PAGE 1-B





L4 ANSWER 75 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:450887 CAPLUS

DOCUMENT NUMBER: 119:50887

ORIGINAL REFERENCE NO.: 119:9233a,9236a

TITLE: Thermoplastic polyether-polyimides for application in the manufacture of electronic devices

INVENTOR(S): Yokokura, Hisao; Nakada, Tadao; Kondo, Katsumi; Ohara, Shuichi; Kitamura, Teruo

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan; Hitachi Chemical Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

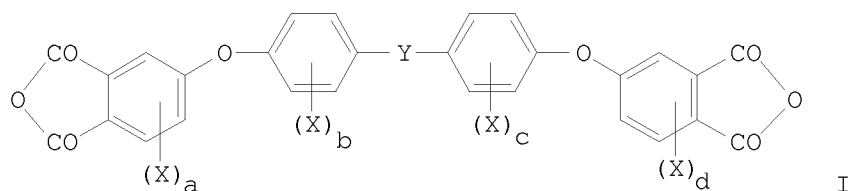
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04304234	A	19921027	JP 1991-69731	19910402
PRIORITY APPLN. INFO.: GI			JP 1991-69731	19910402





AB The title polymers, curable at lower temps. at a short time and useful for oriented films for liquid-crystal display devices and interlayer insulating films for semiconductor devices, are prepared by reacting diamines with I (R1 = C5-18 alkyl; R2 = C1-18 alkyl; X = C1-4 alkyl; Y = CR1R2, CHCHR1R2, cyclohexanylidene; a, b, c, d = 0, 1, 2). Thus, stirring 3,3',4,4'-biphenyltetracarboxylic acid dianhydride 0.5, 2,2-bis[4-(p-aminophenoxy)phenyl]propane 0.7, 2,2-bis[4-(3,4-dicarboxyphenoxy)phenyl]octane dianhydride 0.5, and diaminodiphenyl ether 0.3 mol% in N-methylpyrrolidone (II) at 5° for 10 h gave a precursor solution having reduced viscosity (0.5% in II, at 30°) 0.3 dL/g, which was heated at 220° for 5 min to give the corresponding polyimide.

IT 148337-84-2P

RL: PREP (Preparation)

(preparation of, for interlayer insulators for semiconductors and orientation films for liquid-crystal display devices)

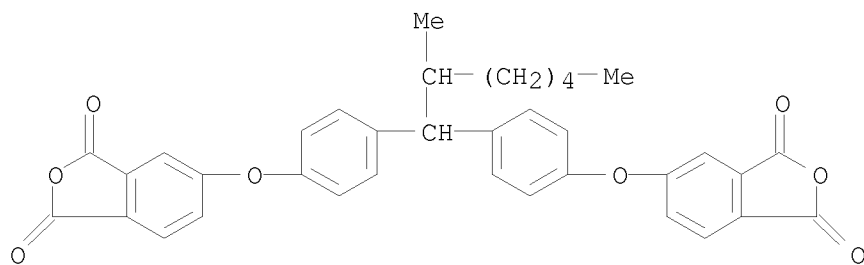
RN 148337-84-2 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with bis[4-(4-aminophenoxy)phenyl]methanone, 1,8-octanediamine and 5,5'[(2-methylheptylidene)bis(4,1-phenyleneoxy)]bis[1,3-isobenzofurandione] (9CI) (CA INDEX NAME)

CM 1

CRN 148337-83-1

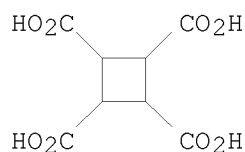
CMF C36 H30 O8



CM 2

CRN 53159-92-5

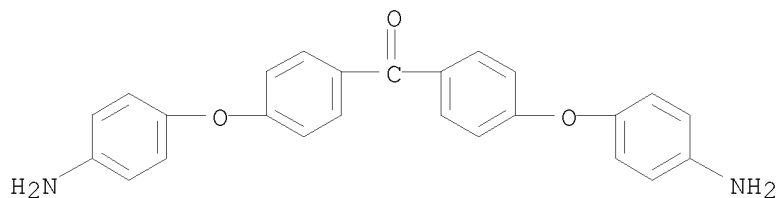
CMF C8 H8 O8



CM 3

CRN 30184-96-4

CMF C25 H20 N2 O3



CM 4

CRN 373-44-4

CMF C8 H20 N2

H<sub>2</sub>N-(CH<sub>2</sub>)<sub>8</sub>-NH<sub>2</sub>

L4 ANSWER 76 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:436758 CAPLUS

DOCUMENT NUMBER: 117:36758

ORIGINAL REFERENCE NO.: 117:6385a,6388a

TITLE: Ferroelectric liquid-crystal display device

INVENTOR(S): Nakajima, Keizo; Wakemoto, Hirobumi

PATENT ASSIGNEE(S): Matsushita Denki Sangyo K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

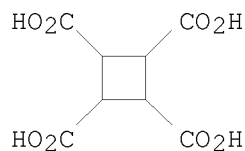
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	JP 04057026	A	19920224	JP 1990-168709	19900627
PRIORITY APPLN. INFO.:				JP 1990-168709	19900627
AB	The title display device comprises a liquid crystal orientation-controlling film having a microphase-separation structure consisting of ≥2 types of regions having different dielec. consts., such as, polymer blends.				
IT	142315-58-0				
	RL: USES (Uses)				
	(microphase orientation films, for liquid-crystal display devices)				
RN	142315-58-0	CAPLUS			
CN	1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with				
	4,4'-methylenabis[benzenamine] (9CI) (CA INDEX NAME)				

CM 1

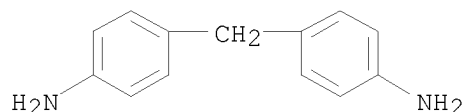
CRN 53159-92-5

CMF C8 H8 O8



CM 2

CRN 101-77-9  
CMF C13 H14 N2



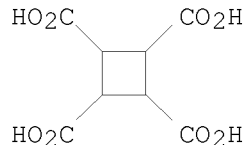
L4 ANSWER 77 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:436757 CAPLUS  
DOCUMENT NUMBER: 117:36757  
ORIGINAL REFERENCE NO.: 117:6385a,6388a  
TITLE: Active-matrix liquid-crystal display apparatus  
INVENTOR(S): Wakemoto, Hirobumi; Nakajima, Keizo; Yokoya, Fumiko  
PATENT ASSIGNEE(S): Matsushita Denki Sangyo K. K., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04057027	A	19920224	JP 1990-168701	19900627

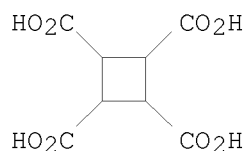
PRIORITY APPLN. INFO.: JP 1990-168701 19900627  
AB The title apparatus comprises a liquid crystal orientation-controlling film made from a polyimide having a structure resulting from condensation of a tetracarboxylic acid moiety and a diamine moiety.  
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: USES (Uses)  
(polyimide made from, for liquid crystal orientation-controlling film)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 78 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1991:658262 CAPLUS  
DOCUMENT NUMBER: 115:258262  
ORIGINAL REFERENCE NO.: 115:43905a,43908a  
TITLE: Wrinkle-resistant cellulosic textiles

INVENTOR(S): Kitchens, John D.; Patton, Robert T.; Nadar, Bassam S.  
 PATENT ASSIGNEE(S): Dow Chemical Co., USA  
 SOURCE: U.S., 4 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5042986	A	19910827	US 1989-421206	19891013
PRIORITY APPLN. INFO.:			US 1989-421206	19891013
AB The title textiles, giving level dyeings, are treated with aqueous solns. of trans-1,2,3,4-cyclobutanecarboxylic acid and a curing catalyst (alkali metal hypophosphites or phosphites, polyphosphoric acid, metal dihydrogen phosphates) and heated to promote esterification and crosslinking.				
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid				
RL: USES (Uses) (creaseproofing finishes, for cellulosic textiles)				
RN 53159-92-5 CAPLUS				
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)				



L4 ANSWER 79 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:428779 CAPLUS

DOCUMENT NUMBER: 115:28779

ORIGINAL REFERENCE NO.: 115:5049a,5052a

TITLE: Platelet aggregation inhibiting and anticoagulant effects of oligoamines. XIV: Branched aliphatic and alicyclic triamines and tetramines

AUTHOR(S): Rehse, Klaus; Kesselhut, Andreas; Schein, Volkmar; Leissring, Susanne

CORPORATE SOURCE: Inst. Pharm., Freie Univ. Berlin, Berlin, 1000/33, Germany

SOURCE: Archiv der Pharmazie (Weinheim, Germany) (1991), 324(4), 243-7

CODEN: ARPMAS; ISSN: 0365-6233

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Twenty-four triamines, e.g., Ph(CH<sub>2</sub>)<sub>4</sub>NH(CH<sub>2</sub>)<sub>3</sub>CH(NH<sub>2</sub>)(CH<sub>2</sub>)<sub>3</sub>NH(CH<sub>2</sub>)<sub>4</sub>Ph, and three tetramines were synthesized. Seventeen triamines inhibited platelet aggregation induced by collagen at a concentration below 10 μmol/L (IC<sub>50</sub>). Ten triamines in a 100 μmolar concentration inhibited fibrin formation induced by thromboplastin by more than 75%. Both effects do not run parallel. They are strongly dependent on the steric and lipophilic properties of the title oligoamines. The tetramines were nearly inactive.

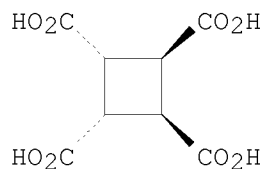
IT 38841-00-8D, esters

RL: RCT (Reactant); RACT (Reactant or reagent)  
(amidolysis of)

RN 38841-00-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1α,2α,3β,4β)- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 80 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:531587 CAPLUS

DOCUMENT NUMBER: 113:131587

ORIGINAL REFERENCE NO.: 113:22343a,22346a

TITLE: Photo[2+2]cycloaddition reaction of maleic acid anhydride

AUTHOR(S): Abou-Elzahab, M. M.; Metwally, M. A.; Dawidar, A. M.; Abdel-Mogib, M.

CORPORATE SOURCE: Fac. Sci., Univ. Mansoura, Mansoura, Egypt

SOURCE: Journal fuer Praktische Chemie (Leipzig) (1989), 331(6), 999-1001

CODEN: JPCEAO; ISSN: 0021-8383

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 113:131587

AB Photolysis of maleic anhydride in benzene in the presence of methanol gave trans,trans,trans-1,2,3,4-cyclobutanetetracarboxylic acid and monomethyl fumarate.

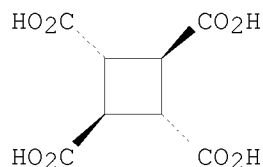
IT 720-21-8P

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)

RN 720-21-8 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 81 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:516464 CAPLUS

DOCUMENT NUMBER: 111:116464

ORIGINAL REFERENCE NO.: 111:19530h,19531a

TITLE: Orientation agents for liquid crystal display elements

INVENTOR(S): Komasa, Nobuaki; Abe, Toyohiko; Tsuruoka, Yoshihiro

PATENT ASSIGNEE(S): Nissan Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

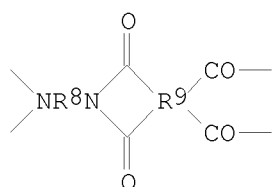
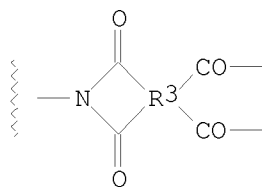
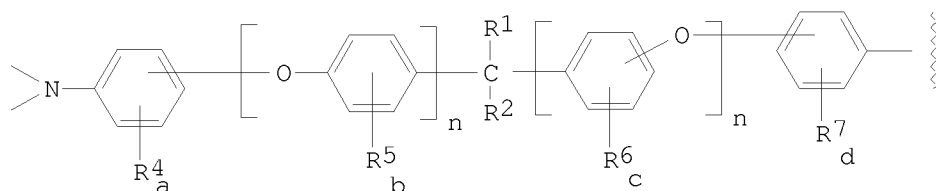
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 63259515	A	19881026	JP 1987-94180	19870416
JP 06048338	B	19940622		
PRIORITY APPLN. INFO.:			JP 1987-94180	19870416
GI				



II

I

AB The title agents providing high orientation to liquid crystals and having durable transparency and good adhesion to substrates are polyimides of 5-100 mol% repeating unit I (R1,R2 = C1-6 fluoroalkyl; R3 = tetravalent organic group based on alicyclic tetracarboxylic acid derivative; R4, R4, R6, R7

= halogen, C1-4 alkyl, alkoxy; a, b, c, d = 0-2; n = 0,1) and 95-0 mol% repeating unit II (R8 = perfluoroalkyl group-free diamine residue; R9 = organic group from alicyclic tetracarboxylic acid derivative). Thus, 1,1,1,3,3,3-hexafluoro-2,2-bis[4-(-aminophenoxy)phenyl]propane 19.13, 2,2-bis[4-(4-aminophenoxy)phenyl]propane 14.35, and cyclobutanetetracarboxylic acid 13.52 g were allowed to react at room temperature for 3 h in 414 g N-methyl-2-pyrrolidone, thinned with the same solvent to 2%-solids, spin-coated, and d baked on glass substrate (attached with transparent electrode) at 250° for 60 min to give a 1000-1500 Å transparent polyimide coating with no dissoln. at all. The coating was rubbed, and the coated glass was made into a cell and filled with ZL1-2293 liquid crystal.

IT 122402-69-1 122402-70-4

RL: USES (Uses)

(alignment control films, for liquid-crystal displays)

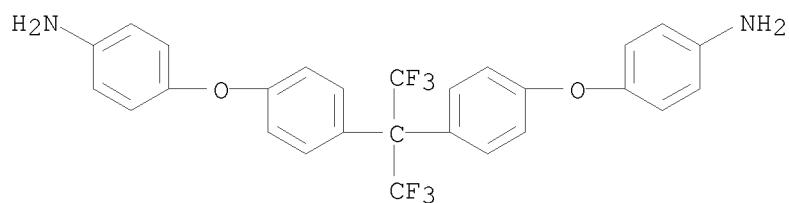
RN 122402-69-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] and 4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 69563-88-8

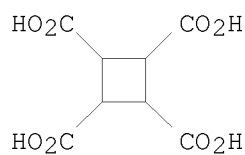
CMF C27 H20 F6 N2 O2



CM 2

CRN 53159-92-5

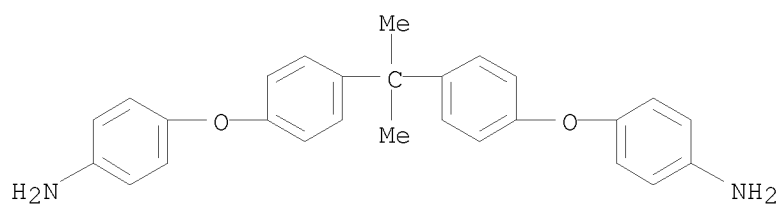
CMF C8 H8 O8



CM 3

CRN 13080-86-9

CMF C27 H26 N2 O2



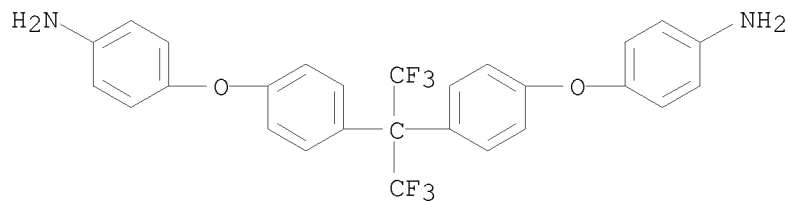
RN 122402-70-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, polymer with  
4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-  
phenyleneoxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 69563-88-8

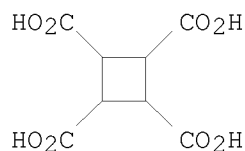
CMF C27 H20 F6 N2 O2



CM 2

CRN 53159-92-5

CMF C8 H8 O8



L4 ANSWER 82 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:74416 CAPLUS

DOCUMENT NUMBER: 110:74416

ORIGINAL REFERENCE NO.: 110:12283a,12284a

TITLE: Three puzzles for organic laboratory

AUTHOR(S): Todd, David; Pickering, Miles

CORPORATE SOURCE: Worcester Polytech. Inst., Worcester, MA, 01609, USA

SOURCE: Journal of Chemical Education (1988), 65(12), 1100-2

CODEN: JCEDA8; ISSN: 0021-9584

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three puzzles are described for organic labs., each of which can be solved using m.p. alone, and each of which involves work at the 100-200-mg scale. The 1st puzzle involves determining the product of the Friedel-Crafts acylation of 2-chlorotoluene with  $\text{AcCl}$ , the 2nd puzzle involves the determination of the product of the nucleophilic substitution of 3,4-dichloronitrobenzene with Na methoxide, and the 3rd puzzle involves determining the isomer formed from the photodimerization of maleic anhydride.

IT 1032-95-7

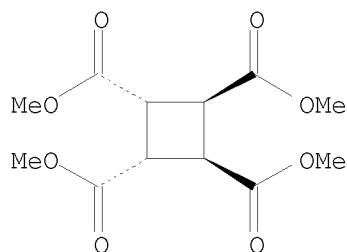
RL: MSC (Miscellaneous)

(m.p. determination of, laboratory experiment in)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 83 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:69737 CAPLUS

DOCUMENT NUMBER: 106:69737

ORIGINAL REFERENCE NO.: 106:11457a,11460a

TITLE: Foam fire extinguishers having improved storage stability and high heat resistance

INVENTOR(S): Hashimoto, Yutaka; Kamei, Masayuki

PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

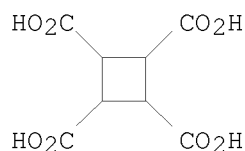
DOCUMENT TYPE: Patent

LANGUAGE: Japanese



FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	JP 61100266	A	19860519	JP 1984-221271	19841023
	JP 06002169	B	19940112		
PRIORITY APPLN. INFO.:				JP 1984-221271	19841023
AB	The fire extinguishers contain cationic water-soluble polymer (A), polybasic acid (B), metallic salt of ionic number $\geq 2$ (C), and anionic hydrophilic group-containing surfactant (D) at a D/(A + B + C) weight ratio of 3:1 - 1:100. Thus, a fire extinguisher containing C <sub>6</sub> F <sub>13</sub> SO <sub>2</sub> N(CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> SO <sub>3</sub> Na)(CH <sub>2</sub> ) <sub>3</sub> N(C <sub>3</sub> H <sub>7</sub> ) <sub>2</sub> 3, polyethyleneimine 6, adipic acid 4, Mg(OCOCH <sub>3</sub> ) <sub>2</sub> 0.6, Butyl Carbitol 15, ethylene glycol 15, and water 56.4% had high storage stability.				
IT	53159-92-5 RL: TEM (Technical or engineered material use); USES (Uses) (foam fire extinguishers containing, with improved storage stability)				
RN	53159-92-5 CAPLUS				
CN	1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)				



L4 ANSWER 84 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1986:36423 CAPLUS  
DOCUMENT NUMBER: 104:36423  
ORIGINAL REFERENCE NO.: 104:5947a,5950a  
TITLE: Aqueous foam fire extinguisher  
INVENTOR(S): Kamei, Masayuki; Endo, Tomio; Hashimoto, Yutaka  
PATENT ASSIGNEE(S): Dainippon Ink Chemical Industry Co. , Japan; Kawamura Physical and Chemical Research Institute  
SOURCE: U.S., 22 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	US 4536298	A	19850820	US 1983-480213	19830330
PRIORITY APPLN. INFO.:				US 1983-480213	19830330
AB	Stable, aqueous foam fire-extinguishing agents with improved performance in controlling polar and nonpolar solvent fires are prepared from A, a surfactant having an anionic hydrophilic group, B, a cationic water-soluble polymeric substance, and C, a polybasic acid compound with the weight ratios B/A = 0.05-50, A/(B + C) = 0.01-10, and B/C = 1/3-5. A Largely contains perfluoroalkyl groups, the aminosulfonate group, and anionic hydrophilic groups such as CO <sub>2</sub> <sup>-</sup> , SO <sub>3</sub> <sup>-</sup> , OSO <sub>3</sub> <sup>-</sup> , or OPO(OH)O <sup>-</sup> . B Is a polyamide-type polymeric substance, and C is an aromatic, aliphatic, alicyclic, or heterocyclic di- through hexabasic acid containing carboxylic, sulfonic, or phosphoric acid groups. Thus, a formulation comprising C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> N(CH <sub>2</sub> CO <sub>2</sub> Na)(CH <sub>2</sub> ) <sub>3</sub> NMe <sub>2</sub> [98900-84-6], polyethylenimine [9002-98-6], and hexanedioic acid [124-04-9] was completely clear with only traces of precipitate and had f.p. -15° and viscosity 156 cSt at -10°. In fire-extinguishing				

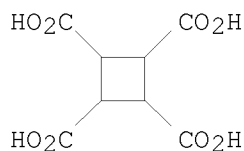
tests with iso-PrOH [67-63-0] with seawater and fresh water, the foam expansion ratios were 6.3 and 6.4, and the extinguishing times were 2 min 16 s and 2 min 56 s, resp. The property and extinguishing test data are given for 94 addnl. A-B-C formulations and for 100 A-B formulations. The time to complete disappearance of the foam and the drainage times are also reported for 38 of the A-B-C formulations used against iso-PrOH, MeOH [67-56-1], and acetone [67-64-1]. Propylene oxide [75-56-9] was included in the more general comprehensive tests.

IT 53159-92-5

RL: TEM (Technical or engineered material use); USES (Uses)  
(fire-extinguishing foams, for polar and nonpolar solvents)

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 85 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1984:473655 CAPLUS

DOCUMENT NUMBER: 101:73655

ORIGINAL REFERENCE NO.: 101:11373a,11376a

TITLE: Epoxy resin compositions cured with imide-amines

INVENTOR(S): Gounder, Raj N.; Geary, John T.

PATENT ASSIGNEE(S): Lord Corp., USA

SOURCE: U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
US 4340715	A	19820720	US 1981-267149	19810526
US 4467100	A	19840821	US 1982-400327	19820721
PRIORITY APPLN. INFO.:			US 1981-267149	A3 19810526

OTHER SOURCE(S): MARPAT 101:73655

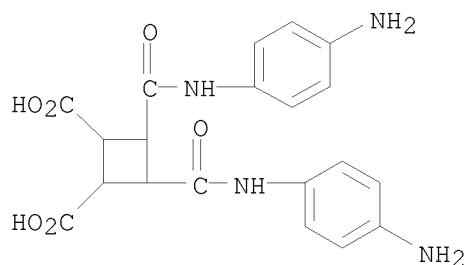
AB Cyclic structures containing imide and amine functions are good curing agents for epoxy resins. Thus, a 1:2 ratio of cyclobutanetetracarboxylic dianhydride [4415-87-6] and p-phenylenediamine [106-50-3] reacted in DMF to form the amic acid [91301-67-6] after 4 h at room temperature; a 3:2 mol ratio of pyridine and Ac2O was added to the amic acid solution and the mixture was heated to 80° to form the N,N'-diaminophenylcyclobutanetetracarboxylic diimide (I) [91301-63-2]. When 11.1 g triglycidyl-p-aminophenol was mixed with 2.97 g I and cured 3 h at 120° and 3 h at 204°, the softening point of the cured system was >300°.

IT 91301-67-6

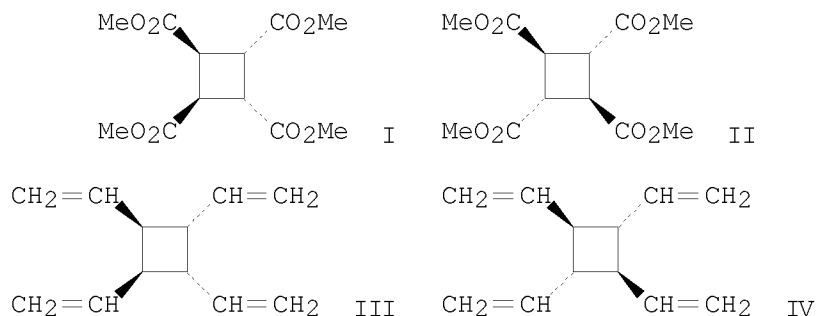
RL: RCT (Reactant); RACT (Reactant or reagent)  
(imidization of)

RN 91301-67-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[[ (4-aminophenyl) amino]carbonyl]-  
(CA INDEX NAME)



L4 ANSWER 86 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1983:594460 CAPLUS  
 DOCUMENT NUMBER: 99:194460  
 ORIGINAL REFERENCE NO.: 99:29923a,29926a  
 TITLE: cis,trans,cis- and trans,trans,trans-1,2,3,4-Tetravinylcyclobutane - preparation and some spectroscopic properties  
 AUTHOR(S): Gleiter, Rolf; Haider, Rudolf; Gubernator, Klaus; Bischof, Peter  
 CORPORATE SOURCE: Org. Chem. Inst., Univ. Heidelberg, Heidelberg, D-6900, Fed. Rep. Ger.  
 SOURCE: Chemische Berichte (1983), 116(8), 2983-93  
 CODEN: CHBEAM; ISSN: 0009-2940  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 99:194460  
 GI



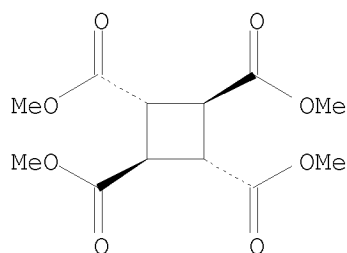
AB Photochem. cyclization of di-Me fumarate gave I, which with NaOMe gave II. These were converted by standard means into the tetrakis(bromoethyl) derivs., dehydrohalogenation of which gave III and IV, resp., the photoelectron spectra of which showed strong interaction between the vinyl groups and the ring, but little interaction between the vinyl groups.

IT 3999-67-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and hydride reduction of)

RN 3999-67-5 CAPLUS

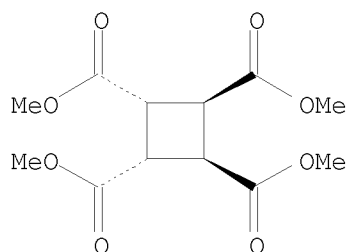
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

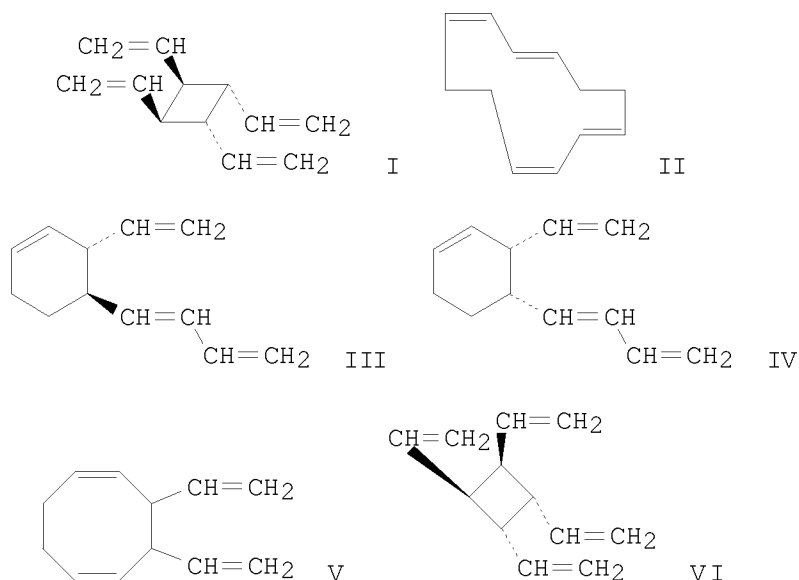


IT 1032-95-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation, isomerization, and hydride reduction of)  
 RN 1032-95-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 87 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1982:526711 CAPLUS  
 DOCUMENT NUMBER: 97:126711  
 ORIGINAL REFERENCE NO.: 97:21025a,21028a  
 TITLE: From cis,trans,cis-1,2,3,4-tetravinylcyclobutane to  
 cyclododecatetraene - two consecutive Cope  
 rearrangements  
 AUTHOR(S): Gubernator, Klaus; Gleiter, Rolf  
 CORPORATE SOURCE: Org.-Chem. Inst., Univ. Heidelberg, Heidelberg,  
 D-6900, Fed. Rep. Ger.  
 SOURCE: Angewandte Chemie (1982), 94(9), 710-11  
 CODEN: ANCEAD; ISSN: 0044-8249  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 OTHER SOURCE(S): CASREACT 97:126711  
 GI



AB I was prepared in a multistep synthesis from trans-MeO<sub>2</sub>CCH:CHCO<sub>2</sub>Me. I at 120° isomerizes almost quant. to a 63:23:14 II (and its cis-trans isomer)-III-IV mixture; the product ratio was temperature and medium independent.

The reaction involves the Cope rearrangement of I to the common intermediate V via VI; V is unstable at these temps. and undergoes a second Cope rearrangement to give II or a 1,3-H shift to give III and IV. The products and I were characterized by <sup>13</sup>C and <sup>1</sup>H NMR.

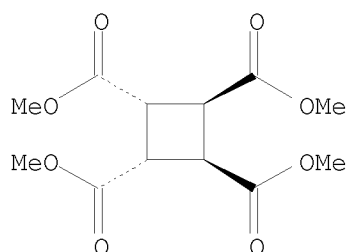
IT 1032-95-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydride reduction of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 88 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1981:3782 CAPLUS

DOCUMENT NUMBER: 94:3782

ORIGINAL REFERENCE NO.: 94:703a,706a

TITLE: Oxidation of tricyclodecenetetracarboxylic acid dianhydrides

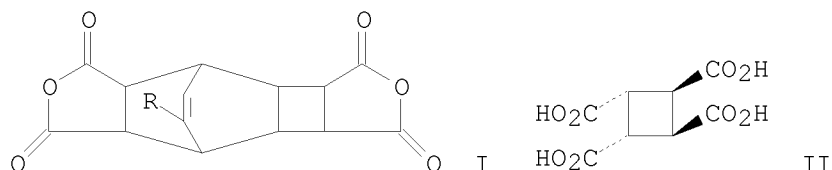
AUTHOR(S): Shpil'man, N. Yu.; Almabekov, O. A.; Zhubanov, B. A.

CORPORATE SOURCE: Inst. Khim. Nauk, Alma-Ata, USSR

SOURCE: Izvestiya Akademii Nauk Kazakhskoi SSR, Seriya Khimicheskaya (1980), (3), 67-70

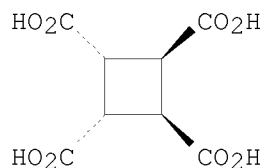
CODEN: IKAKAK; ISSN: 0002-3205

DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 94:3782  
 GI

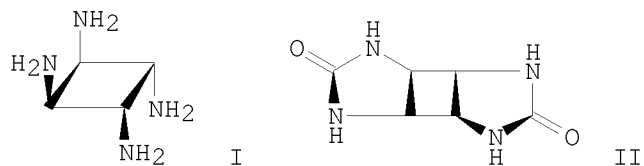


AB Oxidation of I (R = H, Cl, F, Me, Me<sub>2</sub>CH, PhO) with HNO<sub>3</sub> gave 50-76% II.  
 IT 38841-00-8P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, from tricyclobutenedicarboxylic anhydrides by oxidation  
 with nitric acid)  
 RN 38841-00-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 89 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1979:507687 CAPLUS  
 DOCUMENT NUMBER: 91:107687  
 ORIGINAL REFERENCE NO.: 91:17371a,17374a  
 TITLE: Synthesis of r-1,c-2,t-3,t-4-cyclobutanetetraamine  
 AUTHOR(S): Scharf, Hans Dieter; Thuenker, Walter  
 CORPORATE SOURCE: Inst. Org. Chem., Tech. Hochsch. Aachen, Aachen,  
 D-5100, Fed. Rep. Ger.  
 SOURCE: Liebigs Annalen der Chemie (1979), (5), 605-7  
 CODEN: LACHDL; ISSN: 0170-2041  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 OTHER SOURCE(S): CASREACT 91:107687  
 GI

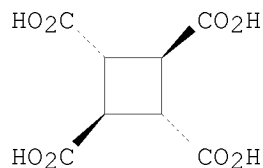


AB The title compound (I).HBr was prepared by saponification of the

cyclobutadiimidazoledione II. The structure of I was confirmed by NMR.  
Some derivs. of I were prepared

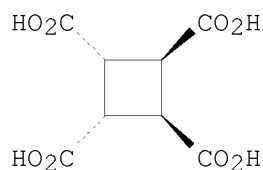
IT 720-21-8 38841-00-8  
RL: PRP (Properties)  
(NMR of)  
RN 720-21-8 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 38841-00-8 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

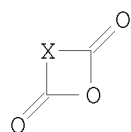


L4 ANSWER 90 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1978:89838 CAPLUS  
DOCUMENT NUMBER: 88:89838  
ORIGINAL REFERENCE NO.: 88:14087a,14090a  
TITLE: N-Phosphonomethylglycine derivatives with phytotoxic  
use  
INVENTOR(S): Gaertner, Van Russell  
PATENT ASSIGNEE(S): Monsanto Co., USA  
SOURCE: Ger. Offen., 60 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2719583	A1	19771124	DE 1977-2719583	19770502
US 4197254	A	19800408	US 1976-682243	19760503
NL 7704710	A	19771107	NL 1977-4710	19770429
SU 665776	A3	19790530	SU 1977-2476270	19770429
HU 27307	A2	19831028	HU 1977-MO981	19770429
HU 184174	B	19840730		
RO 72258	A1	19820909	RO 1977-90201	19770430
BE 854167	A1	19771103	BE 1977-177184	19770502
DK 7701918	A	19771104	DK 1977-1918	19770502
FI 7701387	A	19771104	FI 1977-1387	19770502
FI 62842	B	19821130		
FI 62842	C	19830310		

NO 7701522	A	19771104	NO 1977-1522	19770502
NO 153369	B	19851125		
NO 153369	C	19860305		
JP 52133928	A	19771109	JP 1977-50051	19770502
JP 57035880	B	19820731		
FR 2350352	A1	19771202	FR 1977-13245	19770502
FR 2350352	B1	19830107		
BR 7702814	A	19780328	BR 1977-2814	19770502
ZA 7702622	A	19780329	ZA 1977-2622	19770502
DD 131521	A5	19780705	DD 1977-198704	19770502
IN 145362	A1	19780930	IN 1977-CA653	19770502
AU 7724756	A	19781109	AU 1977-24756	19770502
AU 510033	B2	19800605		
GB 1532329	A	19781115	GB 1977-18237	19770502
AT 7703084	A	19790115	AT 1977-3084	19770502
AT 351860	B	19790827		
CS 193093	B2	19790917	CS 1977-2861	19770502
PL 106810	B1	19800131	PL 1977-209094	19770502
CA 1085405	A1	19800909	CA 1977-277575	19770502
IL 51987	A	19810913	IL 1977-51987	19770502
SE 7705110	A	19771104	SE 1977-5110	19770503
SE 431213	B	19840123		
SE 431213	C	19840503		
CH 628905	A5	19820331	CH 1977-5503	19770503
SU 680651	A3	19790815	SU 1977-2518656	19770908
AT 7801423	A	19790415	AT 1978-1423	19780228
AT 353284	B	19791112		
US 4251257	A	19810217	US 1979-67252	19790817
SE 8004235	A	19800606	SE 1980-4235	19800606
SE 439417	B	19850617		
SE 439417	C	19850926		
PRIORITY APPLN. INFO.:			US 1976-682243	A 19760503
			AT 1977-3084	A 19770502

GI



II

AB The title compds., RO<sub>2</sub>CCH<sub>2</sub>N[CH<sub>2</sub>P(O)(OH)(OR<sub>1</sub>)]COXCO<sub>2</sub>R<sub>1</sub> [I, R = H, alkyl, alkali metal; R<sub>1</sub> = H, alkali metal, X = vinylene, methylvinylene, alkylene, phenylene, substituted phenylene, cycloalkylene, dicarboxycycloalkylene, norbornylene, N-methylpyrrolylidene, pyridylidene, picolylidene, thienylidene] were prepared by acylation of RO<sub>2</sub>CCH<sub>2</sub>NHCH<sub>2</sub>P(O)(OH)<sub>2</sub> with anhydrides II. Thus, 0.1 mol HO<sub>2</sub>CCH<sub>2</sub>NHCH<sub>2</sub>P(O)(OH)<sub>2</sub> in 30 mL H<sub>2</sub>O was treated with 0.2 mol of 50% aqueous NaOH followed by 0.125 mol phthalic anhydride to give HO<sub>2</sub>CCH<sub>2</sub>N[CH<sub>2</sub>P(O)(OH)<sub>2</sub>]COC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H-o (III). Among the 20 I prepared were (R, R<sub>1</sub>, X, given): H, H, CH<sub>2</sub>CH<sub>2</sub>; H, H, 1,2-cyclobutylidene; H, H, CH<sub>2</sub>CMe<sub>2</sub>CH<sub>2</sub>; Et, H, CH<sub>2</sub>CHMe. Extensive data were given for the effectiveness of I against 20 plants. Thus, after 2 wks at 11.2 kg/ha I killed thistle, Chenopodium album, Polygonum, and couch grass.

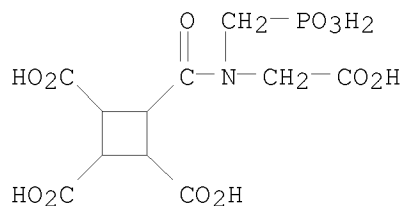
IT 65617-56-3P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation and herbicidal activity of)

RN 65617-56-3 CAPLUS



CN 1,2,3-Cyclobutanetricarboxylic acid,  
4-[[ (carboxymethyl) (phosphonomethyl) amino]carbonyl]- (CA INDEX NAME)



L4 ANSWER 91 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1974:463228 CAPLUS  
 DOCUMENT NUMBER: 81:63228  
 ORIGINAL REFERENCE NO.: 81:10061a,10064a  
 TITLE: Esteramides of cyclic polycarboxylic acids  
 INVENTOR(S): Nohe, Heiniz; Nottes, Ernst G.  
 PATENT ASSIGNEE(S): BASF A.-G.  
 SOURCE: Ger. Offen., 15 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2256690	A1	19740606	DE 1972-2256690	19721118
DE 2256690	B2	19751127		
DE 2256690	C3	19760708		
DE 2316535	A1	19741024	DE 1973-2316535	19730403
CA 1019571	A1	19771025	CA 1973-185873	19731115
FR 2207180	A1	19740614	FR 1973-40906	19731116
SU 466666	A3	19750405	SU 1973-1970238	19731116
AT 7309660	A	19750615	AT 1973-9660	19731116
AT 328600	B	19760325		
SE 383161	B	19760301	SE 1973-15568	19731116
IT 1001797	B	19760430	IT 1973-31411	19731116
GB 1442143	A	19760707	GB 1973-53221	19731116
BE 807489	A1	19740520	BE 1973-137895	19731119
JP 49081408	A	19740806	JP 1973-129287	19731119
JP 51039963	B	19761030		
US 4004894	A	19770125	US 1975-563051	19750328
PRIORITY APPLN. INFO.:			DE 1972-2256690	A 19721118
			DE 1973-2304068	A 19730127
			DE 1973-2316535	A 19730403
			US 1973-417127	A2 19731119

AB Ester amides of cyclic polycarboxylic acids, e.g., cyclobutanetetracarboxylic, cyclohexanehexacarboxylic, and bicyclo[2.2.2]octenetetracarboxylic acids were prepared by the reaction of the acid with an alc. in DMF, followed by distillation and reaction of the product with an amine in xylene. Thus, cyclohexane-hexacarboxylic acid reacted with Me(CH<sub>2</sub>)<sub>4</sub>CHEtCH<sub>2</sub>OH, then with Me(CH<sub>2</sub>)<sub>5</sub>NH<sub>2</sub> to give cyclohexanehexacarboxylic acid tris-(2-ethylhexyl) ester bis(hexylamide); this and 17 other similarly prepared compds. were useful as gasoline additives to promote complete combustion.

IT 53159-93-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

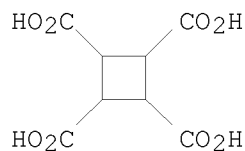
RN 53159-93-6 CAPLUS

CN Cyclobutanedicarboxylic acid, bis[(hexylamino)carbonyl]-, dinonyl ester  
(9CI) (CA INDEX NAME)

CM 1

CRN 53159-92-5

CMF C8 H8 O8



CM 2

CRN 143-08-8

CMF C9 H20 O

Me-(CH<sub>2</sub>)<sub>8</sub>-OH

CM 3

CRN 111-26-2

CMF C6 H15 N

H<sub>2</sub>N-(CH<sub>2</sub>)<sub>5</sub>-Me

L4 ANSWER 92 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1974:27494 CAPLUS

DOCUMENT NUMBER: 80:27494

ORIGINAL REFERENCE NO.: 80:4545a, 4548a

TITLE: Aliphatic poly(amido acids) and polyimides with cyclobutane ring in the main chain

AUTHOR(S): Nakanishi, Fusae; Hasegawa, Masaki; Takahashi, Hiroshi

CORPORATE SOURCE: Res. Inst. Polym. Text., Yokohama, Japan

SOURCE: Polymer (1973), 14(9), 440-4

CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cis,trans, cis-1,2,3,4-Cyclobutanetetracarboxylic dianhydride and its 1,3-di-Me derivative (I, R = H and Me, resp.) reacted in DMF at 15-16.deg. with H<sub>2</sub>H(CH<sub>2</sub>)<sub>n</sub>NH<sub>2</sub> (m = 6,9) and (p-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CH<sub>2</sub> to give hygroscopic poly(imido acids) II [R = H, Me; R<sub>1</sub> = (CH<sub>2</sub>)<sub>5</sub> (CH<sub>2</sub>)<sub>9</sub> or p-C<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>C<sub>6</sub>H<sub>4</sub>-p] which were converted to polyimides III by Ac<sub>2</sub>O in DMF at 100.deg.. Thermogravimetric anal. of II showed that cyclocondensation occurred at 180.deg. to give III.

IT 50871-08-4P

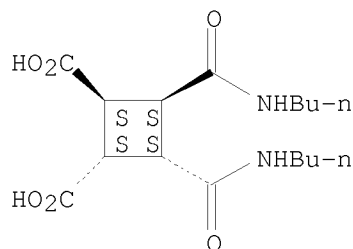
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as model compound for polyamide synthesis)

RN 50871-08-4 CAPLUS

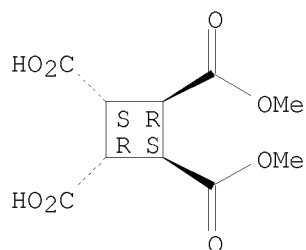
CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis[(butylamino)carbonyl]-, (1 $\alpha$ ,2 $\beta$ ,3 $\beta$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 93 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1973:504786 CAPLUS  
DOCUMENT NUMBER: 79:104786  
ORIGINAL REFERENCE NO.: 79:16991a,16994a  
TITLE: Electrochemical synthesis of  
cis-3,4-dicarboxymethoxycyclobutene  
AUTHOR(S): Leftin, J. H.; Redpath, D.; Pines, A.; Gil-Av, E.  
CORPORATE SOURCE: Dep. Chem., Suffolk Univ., Boston, MA, USA  
SOURCE: Israel Journal of Chemistry (1973), 11(1), 75-7  
CODEN: ISJCAT; ISSN: 0021-2148  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Anodic oxidation of cis,trans,cis-3,-4-dicarboxomethoxy-1,2-  
cyclobutanedicarboxylic acid gave 65% of the title compound, which on  
heating isomerized stereospecifically to cis,trans-MeO<sub>2</sub>CCH:CHCH:CHCO<sub>2</sub>Me.  
IT 42577-14-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(electrochem. oxidation of)  
RN 42577-14-0 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 94 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1972:500953 CAPLUS  
DOCUMENT NUMBER: 77:100953  
ORIGINAL REFERENCE NO.: 77:16639a,16642a  
TITLE: Photodehydrocyclizations in stilbenelike compounds.  
V. Photochemistry of 2,2'-distyrylbiphenyl  
AUTHOR(S): Laarhoven, W. H.; Cuppen, Th. J. H. M.  
CORPORATE SOURCE: Dep. Org. Chem., R. C. Univ., Nijmegen, Neth.  
SOURCE: Journal of the Chemical Society, Perkin Transactions  
1: Organic and Bio-Organic Chemistry (1972-1999)  
(1972), (16), 2074-9  
CODEN: JCPRB4; ISSN: 0300-922X  
DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB Irradiation of 2,2'-distyrylbiphenyl (I) in hexane under N for .apprx.15 min gave the kinetically-controlled product trans,trans,trans-1,2,2a,10b-tetrahydro-1,2-diphenylcyclobuta[1]phenanthrene (II) but irradiation, for 6 hr gave 4,5,9,10-tetrahydro-4,9-diphenylphrene (III). Irradiation of I under N in the presence of iodine gave (-phenylbenzo[c]chrysene (IV). I in an evacuated tube at 240-50° for 2 hr gave, cis,cis,cis-1,2,2a,10b-tetrahydro-1,2-diphenylcyclobuta[1]phenanthrene (V). On irradiation or heating II reverted to I but V decomposed to cis-stilbene and phenanthrene.

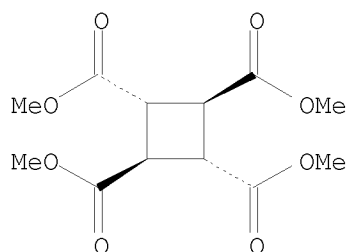
IT 3999-67-5P 31351-41-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 3999-67-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

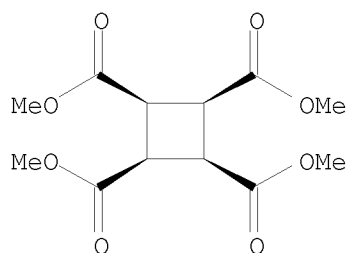
Relative stereochemistry.



RN 31351-41-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 95 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1972:442880 CAPLUS

DOCUMENT NUMBER: 77:42880

ORIGINAL REFERENCE NO.: 77:7051a,7054a

TITLE: Chromatographic analysis of mixtures of aliphatic dicarboxylic acids and lactones

AUTHOR(S): Kucera, J.

CORPORATE SOURCE: Inst. Nucl. Res., Rez/Prague, Czech.

SOURCE: Fette, Seifen, Anstrichmittel (1972), 74(3), 143-50

CODEN: FSASAX; ISSN: 0015-038X

DOCUMENT TYPE: Journal

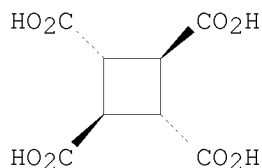
LANGUAGE: German

AB Aliphatic dicarboxylic acids and lactones were separated and identified by 8.5:1.5 96% EtOH-NH<sub>4</sub>OH, 3:1 Me<sub>2</sub>CO-0.5N NH<sub>4</sub>OAc, or 3:1 Me<sub>2</sub>CO-0.5N HOAc

solvent system and by thin-layer chromatog. on silica gel G with 8:1.6:0.4 PrOH-H<sub>2</sub>O-NH<sub>4</sub>OH developing solvent. Hydroxy acids and cis- and trans-isomers of unsatd. acids can be separated R<sub>f</sub> data for 37 compds. are given. Spots were visualized by spraying with 5% AgNO<sub>3</sub> in 10% NH<sub>3</sub> solution and heating at 110° or by spraying with 0.5% KMnO<sub>4</sub> in 2.5% H<sub>2</sub>SO<sub>4</sub> (for unsatd. acids).

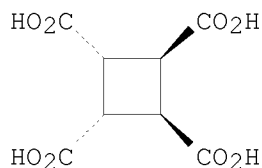
IT 720-21-8 38841-00-8  
RL: ANT (Analyte); ANST (Analytical study)  
(chromatog. of)  
RN 720-21-8 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 38841-00-8 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 96 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1972:24393 CAPLUS

DOCUMENT NUMBER: 76:24393

ORIGINAL REFERENCE NO.: 76:3967a,3970a

TITLE: Photochemical cycloaddition reactions. II.  
Dimerization and cycloadduct formation of some  
seven-membered carbocycles

AUTHOR(S): Kopecky, J.; Shields, J. E.

CORPORATE SOURCE: Ustav Prum. Hyg., Prague, Czech.

SOURCE: Collection of Czechoslovak Chemical Communications  
(1971), 36(10), 3517-26  
CODEN: CCCCAK; ISSN: 0010-0765

DOCUMENT TYPE: Journal

LANGUAGE: English

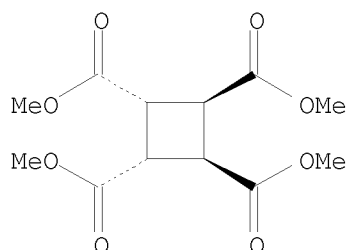
OTHER SOURCE(S): CASREACT 76:24393

AB The photochem. behavior of 2,3,6,7-dibenzocycloheptatriene-1-one (I), 2,3,6,7-dibenzocycloheptatriene and 1-methylene-2,3,6,7-dibenzocycloheptatriene (II), individually and in the presence of each other, was studied. Irradiation of solns. of these substances gave anti cyclobutane dimers and adducts; reactions occurred exclusively at the endocyclic olefinic sites in I and II. This observed photospecificity is supported by MO calcns. of delocalization energies for the possible reactive sites in the monomers. The elucidation of structures, thermal decomposition, chemical interconversions, and stereochemistry

of the photoproducts are described.

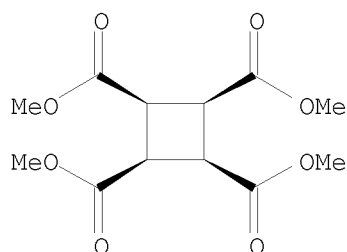
IT 1032-95-7P 31351-41-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 1032-95-7 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 31351-41-4 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 97 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1971:488002 CAPLUS

DOCUMENT NUMBER: 75:88002

ORIGINAL REFERENCE NO.: 75:13929a,13932a

TITLE: Topochemistry. XXXI. Formation of  
1,5-cis,cis-cyclooctadienes from 1,4-disubstituted  
s-trans-butadienes in the solid state. C4- versus  
C8-cyclodimerization

AUTHOR(S): Schmidt, G. M. J.; Green, B. S.; Lahav, M.

CORPORATE SOURCE: Dep. Chem., Weizmann Inst. Sci., Rehovot, Israel

SOURCE: Journal of the Chemical Society [Section] B: Physical  
Organic (1971), (8), 1552-64  
CODEN: JCSPAC; ISSN: 0045-6470

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Solid MeCH:CHCH:CHCO<sub>2</sub>H (I), MeCH:CHCH:CHCONH<sub>2</sub> (II), NCCH:CHCH:CHCN (III),  
PhCH:CHCH:CHCO<sub>2</sub>H (IV), PhCH:CHCH:CHCO<sub>2</sub>Me, and PhCH:CHCH:CHCONH<sub>2</sub> (V) (all  
with trans,trans-configuration) dimerized on irradiation ( $\lambda$  >290 nm) to  
divinylcyclobutane derivs. The structures of the fully characterized  
photoproducts from I, II, III, and V and the light-stability of  
PhCH:CHCH:CHCONHPh were predictable from the known or postulated packing  
arrangements of their monomers. trans-1,trans-15-Cyclooctadienes,  
although topochem. and symmetry-allowed from monomers which crystallize  
with parallel butadiene chains (I, II, III, and possibly IV), were not

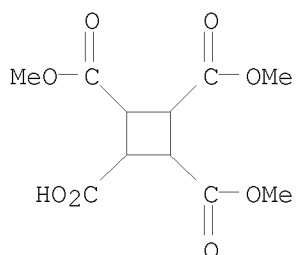
observed The (all-axial)-cis-1,cis-5-cyclooctadiene derivs. formed during irradiation of I, II, and IV were not primary photoproducts but arose from thermal Cope rearrangements of photochem.-produced cis-1,2-divinylcyclobutanes.

IT 34271-90-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 34271-90-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, trimethyl ester, stereoisomer  
(8CI) (CA INDEX NAME)



L4 ANSWER 98 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1971:411703 CAPLUS

DOCUMENT NUMBER: 75:11703

ORIGINAL REFERENCE NO.: 75:1873a,1876a

TITLE: Structure of a planar cyclobutane.  
Cis,trans,cis-1,2,3,4-cyclobutanetetracarboxylic acid  
tetramethyl ester

AUTHOR(S): Margulis, Thomas N.

CORPORATE SOURCE: Dep. Chem., Univ. Massachusetts, Boston, MA, USA

SOURCE: Journal of the American Chemical Society (1971),  
93(9), 2193-5  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A single-crystal x-ray diffraction study of the title compound shows the cyclobutane ring to be planar with C-C bond lengths of  $1.572 \pm 0.005$  and  $1.541 \pm 0.004$  Å. The crystals are triclinic, space group P , with  $a = 8.939$ ,  $b = 5.963$ , and  $c = 6.454$  Å;  $\alpha = 95.17$ ,  $\beta = 81.43$ ,  $\gamma = 78.74^\circ$ ;  $Z = 1$  and calculated  $d. = 1.45$ . The structure was refined to an R value of 0.035 for 833 independent reflections.

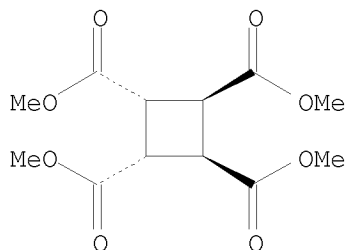
IT 1032-95-7

RL: PRP (Properties)  
(crystal structure of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 99 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1971:75813 CAPLUS  
DOCUMENT NUMBER: 74:75813  
ORIGINAL REFERENCE NO.: 74:12299a,12302a  
TITLE: Photochemistry of  $\alpha,\beta$ -unsaturated  
 $\gamma$ -lactones. I. Structures of the photodimers  
of 4-hydroxycrotonic acid  $\gamma$ -lactone  
AUTHOR(S): Ohga, Kazuya; Matsuo, Taku  
CORPORATE SOURCE: Fac. Eng., Kyushu Univ., Fukuoka, Japan  
SOURCE: Bulletin of the Chemical Society of Japan (1970),  
43(11), 3505-10  
CODEN: BCSJA8; ISSN: 0009-2673  
DOCUMENT TYPE: Journal  
LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB The structures of the photodimers obtained from 4-hydroxycrotonic acid  
 $\gamma$ -lactone under several conditions were determined. The products of  
irradiations in the solution were a pair of anti dimers: one is a head-to-head  
cycloadduct (I) and the other a head-to-tail adduct (II). The  
corresponding product in the solid state, on the other hand, was a  
head-to-head cycloadduct (III), in the syn form.

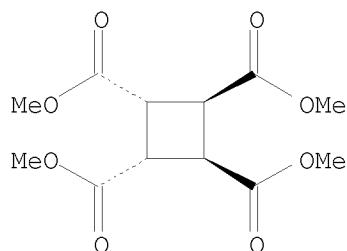
IT 1032-95-7P 31351-41-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

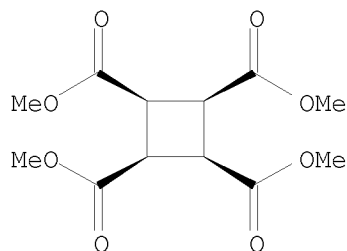
Relative stereochemistry.



RN 31351-41-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



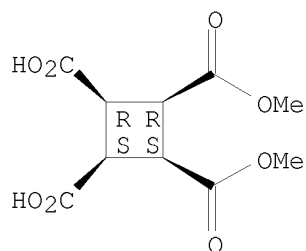
L4 ANSWER 100 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1970:487884 CAPLUS  
DOCUMENT NUMBER: 73:87884



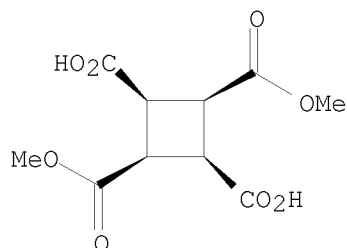
ORIGINAL REFERENCE NO.: 73:14365a,14368a  
 TITLE: Effect of radiation on stable nucleic acid. 19.  
 Synthesis of the cis/syn- and cis/anti-dimeric uracils  
 AUTHOR(S): Richter, Peter; Fahr, Egon  
 CORPORATE SOURCE: Inst. Org. Chem., Univ. Wuerzburg, Wuerzburg, Fed.  
 Rep. Ger.  
 SOURCE: Tetrahedron Letters (1970), (22), 1921-3  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 GI For diagram(s), see printed CA Issue.  
 AB The cis/anti- and cis/syn-dimeric uracils (I) and (II), resp., were prepared  
 Thus, refluxing III in MeOH gave IV (R = OH) and V (R = OH). IV (R = OH)  
 was heated in CHCl<sub>3</sub> with PCl<sub>5</sub> to give IV (R = Cl) which was treated with  
 NaN<sub>3</sub> in CHCl<sub>3</sub> to give IV (R = N<sub>3</sub>). Refluxing IV (R = N<sub>3</sub>) in PhMe under N  
 gave VI (R = NCO) which was converted to VI (R = NHCONH<sub>2</sub>) by NH<sub>3</sub> in CHCl<sub>3</sub>.  
 I (4%) and uracil were prepared by heating VI (R = NHCONH<sub>2</sub>) with 2N HCl at  
 65-70°. The ir spectrum of I was identical with that of the  
 product of uv irradiation of uracil. II was similarly prepared from V (R =  
 OH).  
 IT 28956-77-6P 28972-38-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 28956-77-6 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester,  
 cis-1,2,cis-1,3,cis-1,4- (8CI) (CA INDEX NAME)

Relative stereochemistry.



RN 28972-38-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
 cis-1,2,cis-1,3,cis-1,4- (8CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 101 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1970:132351 CAPLUS  
 DOCUMENT NUMBER: 72:132351  
 ORIGINAL REFERENCE NO.: 72:23687a,23690a  
 TITLE: Preparation and properties of some 1,1'-diphenyl-syn,

trans-truxane[9,10-diphenyl-syn,  
trans-4b,4c,9,9z,9b,10-hexahydrocyclobuta[1,2-a:4,3-  
a]diindene]derivatives  
AUTHOR(S): Setliff, Frank L.  
CORPORATE SOURCE: Univ. of Arkansas, Little Rock, AR, USA  
SOURCE: Proceedings of the Arkansas Academy of Science (1969),  
23, 177-82  
CODEN: AKASAO; ISSN: 0097-4374

DOCUMENT TYPE: Journal  
LANGUAGE: English

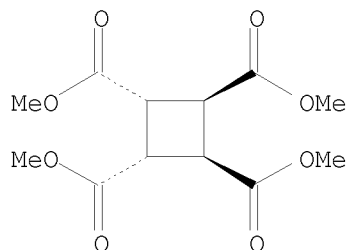
AB exo,exo-1,1'-Dibromo-syn,trans-truxane (I) was treated with PhMgBr in the presence of CoCl<sub>2</sub> in ether-benzene to yield 51% exo,exo-1,1'-diphenyl-syn,trans-truxane (II), m. 205-6° (methylcyclohexane). II was also prepared (in 20% yield) by the alkylation of C<sub>6</sub>H<sub>6</sub> with I in the presence of AlCl<sub>3</sub> (12 hr at room temperature and 1 hr at 50°). Longer reaction times or higher temps. cause the disappearance of II and give 30% exo,endo-1,1'-diphenyl-syn,trans-truxane (III), m. 147-9°. II isomerizes to III (37% yield) with excess AlCl<sub>3</sub> in C<sub>6</sub>H<sub>6</sub> with gaseous HCl. The exo,exo isomer was assumed to be the more stable; two sequences are offered to explain the II → III isomerization. Degradative ozonolysis of II and III in AcOH at room temperature, followed by esterification of the acid product with CH<sub>2</sub>N<sub>2</sub> give cis,trans-1,2, 3,4-tetracarboxymethoxy-cyclobutane.

IT 1032-95-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 102 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1970:42919 CAPLUS

DOCUMENT NUMBER: 72:42919

ORIGINAL REFERENCE NO.: 72:7855a,7858a

TITLE: Cyclobutanes. XXIV. Rearrangement of the  
tricyclo[4.2.0.02.5]octane system into the  
tricyclo[4.2.0.02.4]octane system

AUTHOR(S): Avram, Margareta; Mateescu, Gheorghe D.; Dinulescu,  
Ilie G.; Nenitzescu, Costin D.

CORPORATE SOURCE: Org.-Chem. Inst., Akad. R.S.R., Bucharest, Rom.

SOURCE: Chemische Berichte (1969), 102(12), 4008-16

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

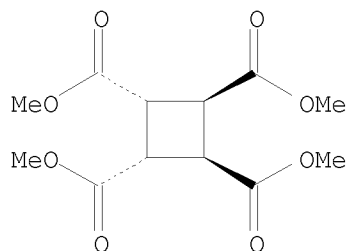
LANGUAGE: German

GI For diagram(s), see printed CA Issue.

AB Addition of Br to anti-tricyclo[4.2.0.02,5]octa-3,7-diene yielded two 3,4,7,8-tetrabromo-anti-tricyclo[4.2.0.02,5]octanes (I and II) which showed cis-trans isomerism of the Br atoms 7 and 8. I and II gave upon base treatment 3,7(or 3,8)-dibromo-anti-tricyclo[4.2.0.02,5]octa-3,7-

diene. I and II gave upon heating the corresponding  
 3,5,7,8-tetrabromo-anti-tricyclo[4.2.0.0<sup>2,4</sup>]octanes (III and IV, resp.).  
 IT 1032-95-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 1032-95-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

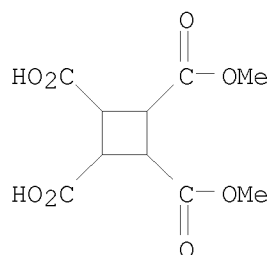
Relative stereochemistry.



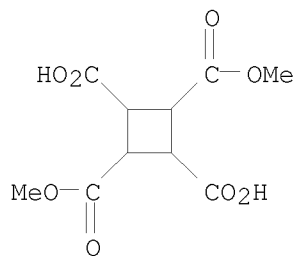
L4 ANSWER 103 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1969:106459 CAPLUS  
 DOCUMENT NUMBER: 70:106459  
 ORIGINAL REFERENCE NO.: 70:19879a,19882a  
 TITLE: Action of radiation on nucleic acid components. XVI.  
 Synthesis of trans/syn- trans/anti-dimeric uracil  
 AUTHOR(S): Richter, P.; Fahr, Egon  
 CORPORATE SOURCE: Univ. Wuerzburg, Wuerzburg, Fed. Rep. Ger.  
 SOURCE: Angewandte Chemie, International Edition in English  
 (1969), 8(3), 208-9  
 CODEN: ACIEAY; ISSN: 0570-0833  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB trans-1,2,3,4-Cyclobutanetetracarboxylic acid dianhydride is converted to  
 trans-1,2-bis(3-methylureido)-trans-3,4-cyclobutanedi-carboxylic acid  
 di-Me ester (I); the trans-1,3-trans-2,3-isomer (II) of I is prepared from a  
 di-Me trans-1,3-cyclobutanedicarboxylate. I and II are heated with 2N HCl  
 to give the title dimers.

IT 22435-78-5P 22555-07-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 22435-78-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester,  
 trans-2,trans-3,cis-4- (8CI) (CA INDEX NAME)



RN 22555-07-3 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
 cis-2,trans-3,trans-4- (8CI) (CA INDEX NAME)



L4 ANSWER 104 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1967:28305 CAPLUS

DOCUMENT NUMBER: 66:28305

ORIGINAL REFERENCE NO.: 66:5335a,5338a

TITLE: Maleic anhydride-hexamethylbenzene mixtures in methylcyclohexane solution and in the solid state. II. Photochemical and thermal reactions

AUTHOR(S): Raciszewski, Zbigniew

CORPORATE SOURCE: Union Carbide Corp., South Charleston, WV, USA

SOURCE: Journal of the Chemical Society [Section] B: Physical Organic (1966), (12), 1147-55  
CODEN: JCSPAC; ISSN: 0045-6470

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

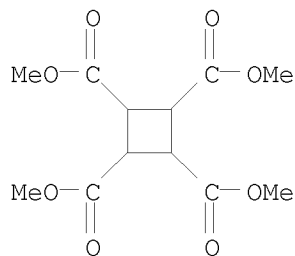
AB cf. preceding abstract A methylcyclohexane solution of maleic anhydride and hexamethylbenzene was irradiated with uv light in the absence and in the presence of filters that confined absorption, either nearly or completely, to the maleic anhydride-hexamethylbenzene charge-transfer complex. In the latter case the reaction mixture also contained toluene in a 6- and 25-fold molar excess over hexamethylbenzene. Pentamethylbenzylsuccinic anhydride and resinous substances were isolated in all expts. but no adducts of toluene with maleic anhydride were found. Evidence was obtained for formation of CO<sub>2</sub> during the irradiation. Uv irradiation of a mixture of maleic anhydride and hexamethylbenzene in the solid state produced 1,2,3,4-cyclobutanetetracarboxylic acid dianhydride (I). No adducts of hexamethylbenzene with maleic anhydride were detected. From a partly carbonized mixture obtained by heating equimolar quantities of maleic anhydride and hexamethylbenzene to 250° for 15.5 hrs. and followed by hydrolysis were isolated pentamethylbenzylsuccinic acid, 4,5,6,7-tetramethylindan-1,2-dicarboxylic acid, and resinous materials. Only 4,5,6,7-tetramethylindan-1,2-dicarboxylic acid and the resins were isolated in a similar experiment but with the heating time extended to 17 hrs. No detectable reaction occurred at 200° over a period of 14 hrs. Large contribution of the dative structure to the electronically excited complex (about 90%) resulted in the proton transfer within the complex to give a geminate pair of free radicals that combined yielding pentamethylbenzylsuccinic anhydride. The course of the photochem. reaction in the solid state reflected the absence of the charge-transfer complex and the limited mobility of the components of the solid matrix. Crystalline products obtained in the thermal reactions probably originated from the addition of the pentamethylbenzyl radical, formed by cleavage of the benzylic C-H bond in hexamethylbenzene, to maleic anhydride.

IT 14495-41-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 14495-41-1 CAPLUS

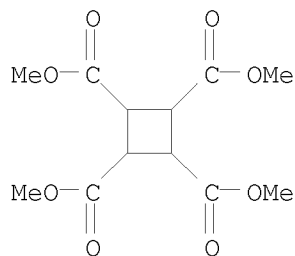
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 105 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1967:28280 CAPLUS  
 DOCUMENT NUMBER: 66:28280  
 ORIGINAL REFERENCE NO.: 66:5327a,5330a  
 TITLE: Configuration analysis of cyclobutane by N.M.R. spectroscopy  
 AUTHOR(S): Weitkamp, Horst; Korte, Friedhelm  
 CORPORATE SOURCE: Univ. Bonn, Bonn, Germany  
 SOURCE: Tetrahedron, Supplement (1966), No. 7, 75-87  
 CODEN: TETSAE; ISSN: 0563-2072  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB A detailed analysis of 20 cyclobutanes is given. The magnetic shielding parameters are between  $\tau = 6.2$  and  $8.2$  ppm. depending on the substituents. The effects of the substituents on the shift values for the ring protons were calculated. The geminal and vicinal spin-spin coupling constant have the same size. The geminal coupling constant is opposite in sign to the vicinal ones, and, from theoretical considerations, assumed to be neg. The differences between the cis- and trans-vicinal coupling consts. are often very small, though the ratio  $J_{cis}/J_{trans}$  is always larger than 1. The magnitudes are  $-11$  to  $-14$  cycles/sec. for the geminal,  $+8$  to  $+12$  cycles/sec. for the cis-vicinal, and  $+8$  to  $+10$  cycles/sec. for the transvicinal coupling consts.

IT 14495-41-1  
 RL: PRP (Properties)  
 (configuration and N.M.R. of)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 106 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:507417 CAPLUS  
 DOCUMENT NUMBER: 65:107417  
 ORIGINAL REFERENCE NO.: 65:19967h,19968a-d  
 TITLE: Effect of radiation on nucleic acid components. VII. Synthesis of uracil trans-dimers

AUTHOR(S): Doerhoefer, G.; Fahr, E.  
 CORPORATE SOURCE: Univ. Wuerzburg, Germany  
 SOURCE: Tetrahedron Letters (1966), (37), 4511-16  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

GI For diagram(s), see printed CA Issue.

AB cf. CA 65, 949h. Tetra-Et trans-cyclobutane tetracarboxylate, prepared by photochem. dimerization of trans-HO<sub>2</sub>CCH:CHCO<sub>2</sub>H, saponified and treated with Ac<sub>2</sub>O gave the anhydride (I), m. 300°. I heated in NH<sub>4</sub>OH gave the amido-carboxylic acids (II, R = CONH<sub>2</sub>), C<sub>8</sub>H<sub>10</sub>N<sub>2</sub>O<sub>6</sub>, m. >300° (di-Me ester, m. >300°, prepared by methylation with CH<sub>2</sub>N<sub>2</sub>). The product was chromatog. unique but on submission to Hofmann degradation gave a very hygroscopic mixture of diaminocyclobutane dicarboxylic acids II (R = NH<sub>2</sub>) (III); tolylsulfonate m. 226-8°. II reacted with KCN gave the mixture (IV). IV was less thermally stable than the photochem. prepared cis-(5,5/6,6)dimeric uracil (V) and could not be recrystd. from H<sub>2</sub>O. Irradiation with shortwave uv light transformed IV into uracil. Paper chromatog. (7:3 PrOH-H<sub>2</sub>O) of IV and V gave the same R<sub>f</sub> value but thin-layer chromatog. on silica gel (7:3 PrOH-H<sub>2</sub>O) gave R<sub>f</sub> 0.50-0.53 for the photochem. prepared dimer V and R<sub>f</sub> 0.60-0.63 for the synthetic dimer IV. Alkaline degradation 60 h. in 10 N aqueous NaOH at 50° reconverted IV to III, identified by the tolylsulfonate. The purely chemical synthesis of trans dimeric uracils demonstrated the presence of a cyclobutene system and showed to what extent the trans linkage of the pyrimidine rings in contrast to the cis dimerization by photochem. means, altered the properties of the dimer.

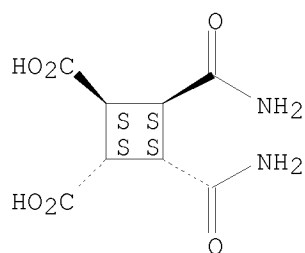
IT 13375-95-6 13375-96-7 13375-97-8  
 13375-98-9

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 13375-95-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-dicarbamoyl-,  
 trans-1,2,trans-1,3,cis-1,4- (8CI) (CA INDEX NAME)

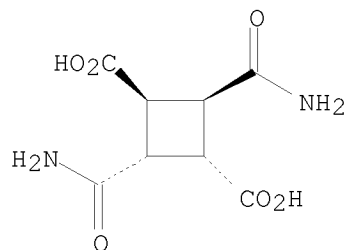
Relative stereochemistry.



RN 13375-96-7 CAPLUS

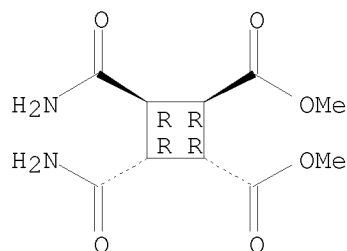
CN 1,3-Cyclobutanedicarboxylic acid, 2,4-dicarbamoyl-,  
 cis-1,2,trans-1,3,trans-1,4- (8CI) (CA INDEX NAME)

Relative stereochemistry.



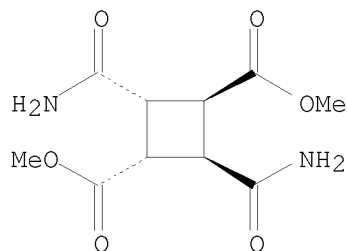
RN 13375-97-8 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-dicarbamoyl-, dimethyl ester,  
 trans-1,2,trans-1,3,cis-1,4- (8CI) (CA INDEX NAME)

Relative stereochemistry.

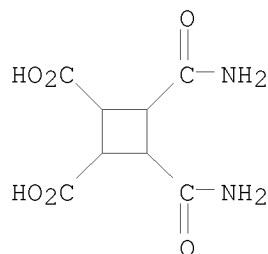


RN 13375-98-9 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-dicarbamoyl-, dimethyl ester,  
 cis-1,2,trans-1,3,trans-1,4- (8CI) (CA INDEX NAME)

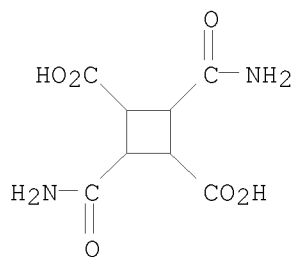
Relative stereochemistry.



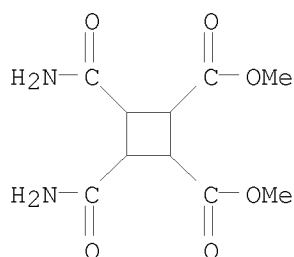
IT 90007-86-6P, 1,2-Cyclobutanedicarboxylic acid, 3,4-dicarbamoyl-  
 90007-87-7P, 1,3-Cyclobutanedicarboxylic acid, 2,4-dicarbamoyl-  
 91059-88-0P, 1,2-Cyclobutanedicarboxylic acid, 3,4-dicarbamoyl-,  
 dimethyl ester 91059-89-1P, 1,3-Cyclobutanedicarboxylic acid,  
 2,4-dicarbamoyl-, dimethyl ester  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 90007-86-6 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis(aminocarbonyl)- (CA INDEX NAME)



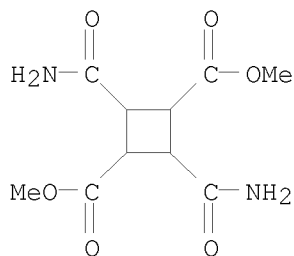
RN 90007-87-7 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-bis(aminocarbonyl)- (CA INDEX NAME)



RN 91059-88-0 CAPLUS  
 CN 1,2-Cyclobutanedicarboxylic acid, 3,4-bis(aminocarbonyl)-, 1,2-dimethyl ester (CA INDEX NAME)



RN 91059-89-1 CAPLUS  
 CN 1,3-Cyclobutanedicarboxylic acid, 2,4-dicarbamoyl-, dimethyl ester (7CI) (CA INDEX NAME)



L4 ANSWER 107 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:507416 CAPLUS  
 DOCUMENT NUMBER: 65:107416  
 ORIGINAL REFERENCE NO.: 65:19967g-h  
 TITLE: Diazo compounds. XXV. Kinetic studies of the photolysis and of the thermal decomposition of diazomethane in cyclohexane and cyclohexene  
 AUTHOR(S): Mueller, Eugen; Renner, R.; Rundel, W.  
 CORPORATE SOURCE: Univ. Tuebingen, Germany  
 SOURCE: Zeitschrift fuer Naturforschung, Teil B: Anorganische Chemie, Organische Chemie, Biochemie, Biophysik, Biologie (1966), 21(8), 751-5  
 CODEN: ZENBAX; ISSN: 0044-3174  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB cf. CA 64, 19512e. The kinetics of the photolysis of diazomethane (I) in cyclohexane, mixts. of cyclohexane-cyclohexene (molar ratio 25:1), and cyclohexene are identical, indicating a similar mechanism, probably a carben mechanism; the presence of O accelerates the photolysis of I in



cyclohexane by a factor of 6. The thermal decompn, of I in the dark in cyclohexane is a 1st order reaction with a half life period of 74 hrs. at 25°.

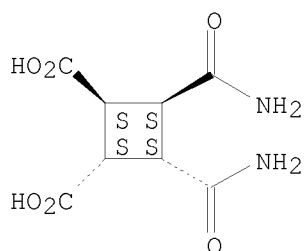
IT 13375-95-6 13375-96-7 13375-97-8  
13375-98-9

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 13375-95-6 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-dicarbamoyl-,  
trans-1,2,trans-1,3,cis-1,4- (8CI) (CA INDEX NAME)

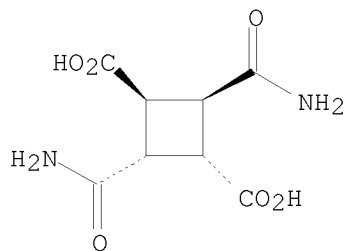
Relative stereochemistry.



RN 13375-96-7 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-dicarbamoyl-,  
cis-1,2,trans-1,3,trans-1,4- (8CI) (CA INDEX NAME)

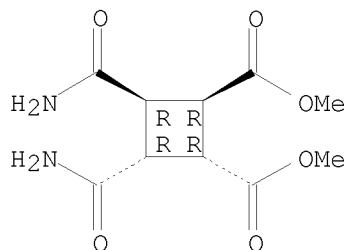
Relative stereochemistry.



RN 13375-97-8 CAPLUS

CN 1,2-Cyclobutanedicarboxylic acid, 3,4-dicarbamoyl-, dimethyl ester,  
trans-1,2,trans-1,3,cis-1,4- (8CI) (CA INDEX NAME)

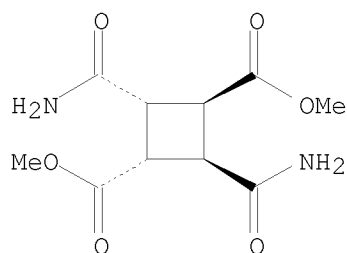
Relative stereochemistry.



RN 13375-98-9 CAPLUS

CN 1,3-Cyclobutanedicarboxylic acid, 2,4-dicarbamoyl-, dimethyl ester,  
cis-1,2,trans-1,3,trans-1,4- (8CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 108 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1966:472656 CAPLUS

DOCUMENT NUMBER: 65:72656

ORIGINAL REFERENCE NO.: 65:13490a-d

TITLE: Photochemistry of crystalline dimethyl  
all-trans-hexatriene-1,6-decarboxylate

AUTHOR(S): Lahav, M.; Schmidt, G. M. J.

CORPORATE SOURCE: Weizmann Inst. Sci., Rehovoth, Israel

SOURCE: Tetrahedron Letters (1966), (26), 2957-62

CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB Di-Me all-trans-hexatriene-1,6-dicarb oxylate, I, m. 172° (alc.), irradiated under Pyrex glass 6 days in sunlight ( $\lambda > 290 \text{ m}\mu$ ) and the mixed product chromatographed from a min. amount of  $\text{CHCl}_3$  on silica gel, eluted with  $\text{C}_6\text{H}_6$  to remove I and again with 9:1  $\text{C}_6\text{H}_6\text{-CHCl}_3$  gave 22% di-Me trans-1,3-bis[4-(1-carbomethoxy)buta-1-trans,3-trans-dienyl]cyclobutane-2,4-dicarboxylate (II), m. 139-40°. II submitted to ozonolysis in  $\text{AcOH}$  2 hrs. and the mixture treated with 20%  $\text{H}_2\text{O}_2$  gave trans-1,3-dicarbomethoxycyclobutane-trans-2,4-dicarboxylic acid, m. 179-80° ( $\text{Me}_2\text{CO}$ ). In the triclinic crystal structure of I, all mols. are likely to be parallel by analogy with the crystal structure of di-Me trans-trans-muconate. Since the unit cell does not have a 4-A. axis the only other sym. dimer to be expected from a topochemically controlled reaction is II. The formation of a cyclodimer from a crystalline hexatriene derivative showed that this solid state reaction occurred with a min. amount of mol. motion since the trans configuration of the triene system was preserved and no other dimers or rearranged monomeric compds. were observed.

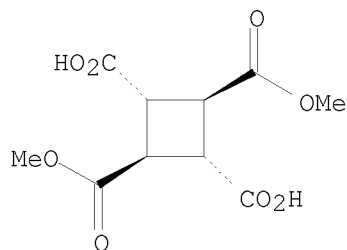
IT 2957-97-3 13160-90-2

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 2957-97-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

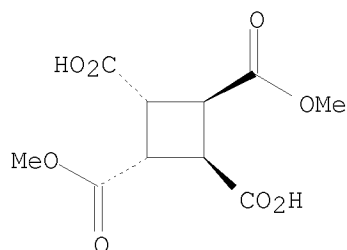


RN 13160-90-2 CAPLUS

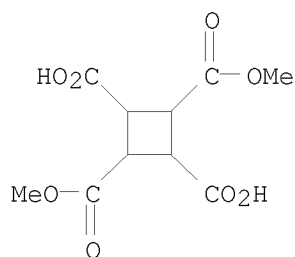
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,

(1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.

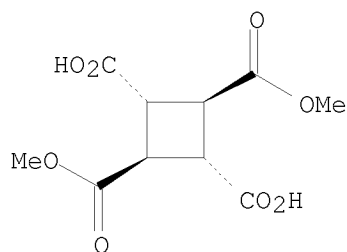


IT 22555-07-3P, 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester, trans,trans-  
RL: PREP (Preparation)  
(preparation of)  
RN 22555-07-3 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester, cis-2,trans-3,trans-4- (8CI) (CA INDEX NAME)



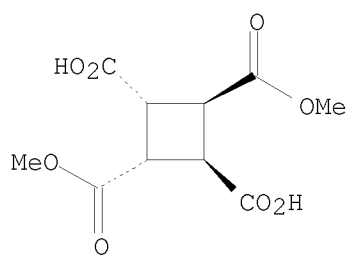
L4 ANSWER 109 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1966:472655 CAPLUS  
DOCUMENT NUMBER: 65:72655  
ORIGINAL REFERENCE NO.: 65:13489h,13490a  
TITLE: Vapor phase photochemistry of 1,3-butadiene-1,1,4,4-d4  
AUTHOR(S): Haler, I.; Srinivasan, R.  
CORPORATE SOURCE: Watson Res. Center, Intern. Business Machines, Yorktown Heights, NY  
SOURCE: Journal of the American Chemical Society (1966), 88(16), 3694-8  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The mechanisms of the 3 primary processes in the vapor phase photolysis of 1,3-butadiene were investigated by the use of D labeling on the end C atoms. None of the processes proceeds by the obvious pathway exclusively. Thus, ethylene and acetylene are formed not only by a 1,3 shift but also via an intermediate cyclobutene and a third path which gives C2H2D2 and C2D2. Two mechanisms seem to be applicable to the other 2 primary processes which give 1,2-butadiene and H2 + C4H4, resp.  
IT 2957-97-3 13160-90-2  
(Derived from data in the 7th Collective Formula Index (1962-1966))  
RN 2957-97-3 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester, (1 $\alpha$ , 2 $\beta$ , 3 $\alpha$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 13160-90-2 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 110 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:465275 CAPLUS  
 DOCUMENT NUMBER: 65:65275  
 ORIGINAL REFERENCE NO.: 65:12123f-g  
 TITLE: Preparation of oximes using a silver chromate and (or)  
 silver dichromate catalyst  
 INVENTOR(S): Young, Vernon V.  
 PATENT ASSIGNEE(S): Commercial Solvents Corp.  
 SOURCE: 8 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

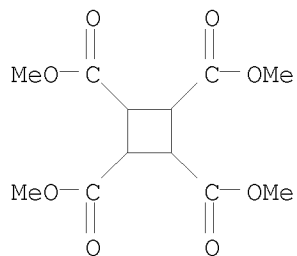
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3267142		19660816	US 1964-412334	19611218

PRIORITY APPLN. INFO.: US 19611218

AB To a suspension of 17 g. AgNO<sub>3</sub> and 21.5 g. ZnO in 400 ml. H<sub>2</sub>O were added solns. of 13 g. (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> or 16.2 g. CaCr<sub>2</sub>O<sub>7</sub> or 15 g. Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>·2H<sub>2</sub>O or 15 g. K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> or 10 g. CrO<sub>3</sub> in 200 ml. H<sub>2</sub>O. The solids were filtered off and dried at 100°. Similarly prepared were Ag<sub>2</sub>CrO<sub>4</sub> and Ag<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> on CaCO<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, CaO, CaHPO<sub>4</sub>, Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, and TiO<sub>2</sub>. These catalysts were used for the hydrogenation of nitroparaffins in MeOH at 500-1000 psi. and 135°. Several examples are given for the reduction of nitrocyclohexane which led to C<sub>6</sub>H<sub>11</sub>NH<sub>2</sub>, C<sub>6</sub>H<sub>11</sub>NHOH, and C<sub>6</sub>H<sub>10</sub>:NOH. The best yields of oxime were obtained with Ag<sub>2</sub>CrO<sub>4</sub>-CaCO<sub>3</sub> 1:1 (23.8%) and with Ag<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>-ZnO 1:1 (29.3%).

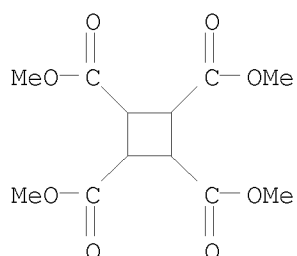
IT 14495-41-1  
 (Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



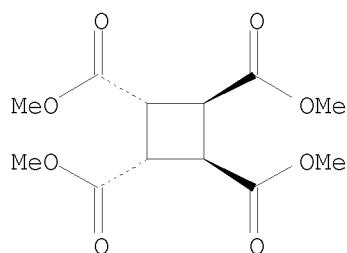
L4 ANSWER 111 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:465274 CAPLUS  
 DOCUMENT NUMBER: 65:65274  
 ORIGINAL REFERENCE NO.: 65:12123f  
 TITLE: Isomerization of tetramethyl cis, trans, cis-1,2,3,4-cyclobutanetetracarboxylate  
 INVENTOR(S): Griffin, Gary W.  
 PATENT ASSIGNEE(S): American Cyanamid Co.  
 SOURCE: 2 pp.; Division of U.S. 3,139,395 (CA 61, 6937b)  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3253016		19660524	US 1964-351519	19640312
PRIORITY APPLN. INFO.:			US	19640312
AB The disclosure is the same but the claims are different.				
IT 14495-41-1				
(Derived from data in the 7th Collective Formula Index (1962-1966))				
RN 14495-41-1 CAPLUS				
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)				



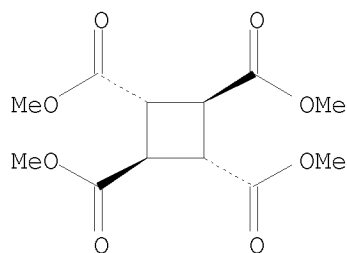
IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis, trans, cis- 3999-67-5P,  
 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, trans, trans, trans-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 1032-95-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



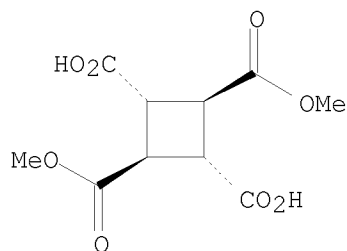
RN 3999-67-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



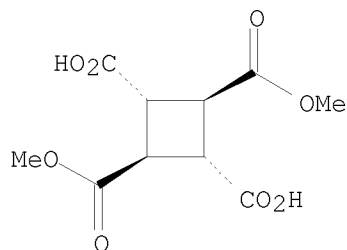
L4 ANSWER 112 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:438196 CAPLUS  
 DOCUMENT NUMBER: 65:38196  
 ORIGINAL REFERENCE NO.: 65:7072h,7073a  
 TITLE: Electrolytic oxidation of cyclobutane-1,3-dicarboxylic acids. An electrochemical synthesis of 2,4-dicarbomethoxybicyclobutane  
 AUTHOR(S): Vellturo, Anthony F.; Griffin, Gary W.  
 CORPORATE SOURCE: Tulane Univ., New Orleans, LA  
 SOURCE: Journal of Organic Chemistry (1966), 31(7), 2241-4  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Anodic oxidation of trans,trans,trans-1,3-dicarboxy-2,4-dicarbomethoxycyclobutane in the Kolbe manner gives 2,4-dicarbomethoxybicyclobutane. In contrast, electrolysis of  $\alpha$ -truxillic acid under similar conditions results in ring contraction and formation of the lactone of cis,cis-1-carboxy-2-( $\alpha$ -hydroxybenzyl)-3-phenylcyclopropane as the major product. A cationic mechanism is invoked to explain the difference in behavior exhibited by these cyclobutane-1,3-dicarboxylic acids.  
 IT 2957-97-3  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 2957-97-3 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 113 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:438195 CAPLUS  
 DOCUMENT NUMBER: 65:38195  
 ORIGINAL REFERENCE NO.: 65:7072h  
 TITLE: 1,5,9-Tridehydro-12-annulene  
 AUTHOR(S): Sondheimer, F.; Wolovsky, R.; Garratt, P. J.; Calder, I. C.  
 CORPORATE SOURCE: Univ. Chem. Lab., Cambridge, UK  
 SOURCE: Journal of the American Chemical Society (1966), 88(11), 2610  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Correction. Isomer B reported (CA 64, 6515e) was shown to be identical with the title compound  
 IT 2957-97-3  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 2957-97-3 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester, (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

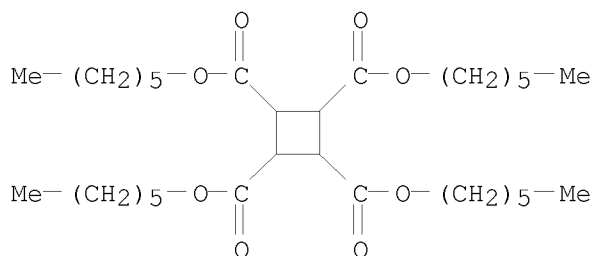
Relative stereochemistry.



L4 ANSWER 114 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:85300 CAPLUS  
 DOCUMENT NUMBER: 64:85300  
 ORIGINAL REFERENCE NO.: 64:16081g-h,16082a  
 TITLE: Esters of 1,2,3,4-cyclobutanetetracarboxylic acid as plasticizers for resins and rubbers  
 INVENTOR(S): Rhum, David; Maggart, Ronald C.; Roper, Robert  
 PATENT ASSIGNEE(S): Esso Research and Engineering Co.  
 SOURCE: 3 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3236801 19660222 US 1963-255073 19630130  
 PRIORITY APPLN. INFO.: US 19630130  
 AB Esters of 1,2,3,4-cyclobutanetetracarboxylic acids are prepared by direct esterification of the appropriate 1,2,3,4-cyclobutanetetracarboxylic acid, dianhydride or acid chloride, by transesterification, or by direct dimerization of a dialkyl maleate or fumarate. When used in amts. of 5-150 parts per 100 parts resin, they give improved low-temperature properties, less volatile loss, and a better compatability-volatility relation. Thus, a mixture of 45 g. tetra-Me 1,2,3,4-cyclobutanetetracarboxylate, 127.5 g. Oxo hexyl alc. and 0.5 g. NaOMe was heated under N to .apprx.140°. After removing most of the alc., the solution was cooled, washed and vacuum stripped to yield tetrahexyl 1,2,3,4-cyclobutanecarboxylate. Fifty parts of this plasticizer was milled into 100 parts of Geon 101 poly(vinyl chloride) containing 2 parts stabilizer. Molded samples gave the following properties (compared with controls containing equal amts. of adipic polyester and dioctyl phthalate): volatility (% plasticizer loss after 7 hrs. at 136°), monomeric tetrahexyl ester 24, adipic polyester 17, dioctyl phthalate 91; % retention of elongation (after 7 hrs. at 136°), monomeric tetrahexyl ester 73, adipic polyester, 76, dioctyl phthalate zero.  
 IT 7566-44-1, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetrahexyl ester  
 (vinyl chloride polymers plasticized by)  
 RN 7566-44-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetrahexyl ester (7CI, 8CI) (CA INDEX NAME)



L4 ANSWER 115 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1966:75514 CAPLUS  
 DOCUMENT NUMBER: 64:75514  
 ORIGINAL REFERENCE NO.: 64:14106e-h  
 TITLE: Structure of the cyclooctatetraene dimer of melting point 53°  
 AUTHOR(S): Schroeder, G.; Martin, W.  
 CORPORATE SOURCE: Tech. Hochsch., Karlsruhe, Germany  
 SOURCE: Angewandte Chemie, International Edition in English (1966), 5(1), 130  
 CODEN: ACIEAY; ISSN: 0570-0833  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB Structure I, proposed for one (m. 53°) of the two dimers obtained by heating cyclooctatetraene at 100°, has been replaced by II. The all-cis-cyclobutane ring is shown, by ozonolysis and further oxidation with perhydrol, to give all cis-cyclobutane-1,2,3,4-tetracarboxylic acid (III). II reacts with one mole (MeO<sub>2</sub>CC.tplbond.)<sub>2</sub> (IIIa) in boiling benzene to give IV, m. 140° (70%). On heating to 150° IV decomposes to give dimethyl phthalate and a hydrocarbon (V); this again on degradative oxidation gave III (34%). V on warming at .apprx.120° (24 hrs.) gave about equal amts. of benzene and an isomeric hydrocarbon (VI). IV reacts



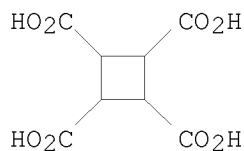
with IIIa at 80° to give VII, m. 162-3° (46%). Likewise V gave VIII, m. 112-14° (17%). Compds. II, IV, V, VII and VIII, each with excess IIIa at 100-20°, gave IX, m. 196-8°.

IT 53159-92-5

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)

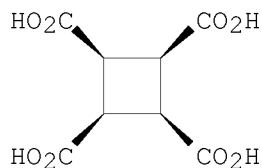


IT 7376-00-3P, 1,2,3,4-Cyclobutanetetracarboxylic acid, cis-  
RL: PREP (Preparation)  
(preparation of)

RN 7376-00-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ , 2 $\alpha$ , 3 $\alpha$ , 4 $\alpha$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 116 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1966:75513 CAPLUS

DOCUMENT NUMBER: 64:75513

ORIGINAL REFERENCE NO.: 64:14106c-e

TITLE: Transformations of bridged bicyclic hydrocarbons. IV.  
Isomerization of 2-methylbicyclo[2.2.2]octane and  
2-methylbicyclo[3.2.1]octane in the presence of  
concentrated sulfuric acid

AUTHOR(S): Belikova, N. A.; Plate, A. F.; Bobyleva, A. A.

CORPORATE SOURCE: State Univ., Moscow

SOURCE: Zhurnal Obshchei Khimii (1966), 2(1), 77-83

CODEN: ZOKHA4; ISSN: 0044-460X

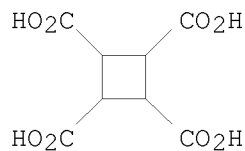
DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB cf. preceding abstract 2-Methylbicyclo[2.2.2]octane and  
2-methylbicyclo[3.2.1]octane shaken with 1 volume concentrated H<sub>2</sub>SO<sub>4</sub> at 35°  
gave the same mixed hydrocarbons C<sub>9</sub>H<sub>16</sub> containing principally  
2-methylbicyclo[3.2.1]octane, with smaller amts. 2- and  
3-methylbicyclo[3.3.0]octanes and a trace of 2-methylbicyclo[2.2.2]octane.  
3-Methylbicyclo[3.2.1]octane was unchanged under these conditions. The  
reaction mixts. were analyzed by gas-liquid chromatography. Evidently the  
title reaction is the result of two consecutive Wagner-Meerwein  
rearrangements. Condensation of cyclohexadiene with acrolein gave  
2-formylbicyclo[2.2.2]octene which was reduced by the Kishner method to  
give 2-methylbicyclo[2.2.2]oct-5-ene, which hydrogenated gave  
2-methylbicyclo[2.2.2]octane, b. 159-9.7°, m. 32-3°, n<sub>D</sub> 1.4630, d<sub>40</sub> 0.8691. Reduction of 2-formylbicyclo[2.2.2]oct-5-ene with NaBH<sub>4</sub>  
gave 2-(hydroxymethyl)bicyclo[2.2.2]oct-5-ene, b<sub>11</sub> 109-10°, n<sub>20D</sub>  
1.5098, which hydrogenated over Ni gave the octane analog, b<sub>14</sub>

115-17°, which after dehydration and hydrogenation gave bicyclo[3.2.2]nonane contaminated by 22% other isomers, m. 115°.

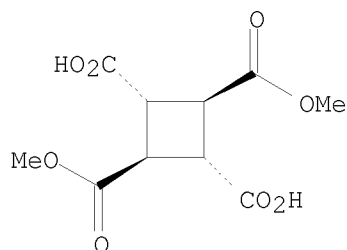
IT 53159-92-5  
(Derived from data in the 7th Collective Formula Index (1962-1966))  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 117 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1965:438739 CAPLUS  
DOCUMENT NUMBER: 63:38739  
ORIGINAL REFERENCE NO.: 63:6882b-e  
TITLE: Electrochemical synthesis of a bicyclobutane  
AUTHOR(S): Vellturo, Anthony F.; Griffin, Gary W.  
CORPORATE SOURCE: Tulane Univ., New Orleans, LA  
SOURCE: Journal of the American Chemical Society (1965),  
87(13), 3021-2  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI For diagram(s), see printed CA Issue.  
AB Electrolysis of trans,trans,trans-1,3-dicarboxy-2,4-dicarbomethoxycyclobutane (I), m. 183-4°, under Kolbe conditions gave 2,4-dicarbomethoxybicyclobutane (II), assumed to be cis, m. 83-5° whose structure was assigned on the basis of its ir and N.M.R. spectra. Further evidence for this structure was obtained by hydrogenation of H over PtO<sub>2</sub> to cis-1,3-dicarbomethoxycyclobutane (III), MeO<sub>2</sub>C(CH<sub>2</sub>)<sub>4</sub>CO<sub>2</sub>Me, and MeO<sub>2</sub>CCH<sub>2</sub>CH<sub>2</sub>CHMeCO<sub>2</sub>Me. trans,trans,trans-I was prepared by ozonolysis of the di-Me ester of ε-truxillic acid and its structure confirmed by conversion to the known trans,trans,trans-1,2,3,4-tetracarbomethoxycyclobutane (IV) on treatment with CH<sub>2</sub>N<sub>2</sub>. It was established that I was not identical (ir spectrum and mixed m.p.) with trans,trans,trans-1,2-dicarboxy-3,4-dicarbomethoxycyclobutane (V), m. 167-70°, prepared by treating dianhydride VI CA 61, 4233e with 2 equivs. of NaOMe. All attempts to prepare trans,trans,trans-I from VI failed.

IT 2957-97-3  
(Derived from data in the 7th Collective Formula Index (1962-1966))  
RN 2957-97-3 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
(1α,2β,3α,4β)- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 118 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1965:438738 CAPLUS  
DOCUMENT NUMBER: 63:38738  
ORIGINAL REFERENCE NO.: 63:6881g-h,6882a-b  
TITLE: Derivatives of tetrahydrodicyclopentadiene in the field of fats. I. Tricyclodecamethanal as starting material  
AUTHOR(S): Kaufmann, H. P.; Grothues, B.  
CORPORATE SOURCE: Deut. Inst. Fettforsch., Muenster, Germany  
SOURCE: Fette, Seifen, Anstrichmittel (1965), 67(4), 249-55  
CODEN: FSASAX; ISSN: 0015-038X  
DOCUMENT TYPE: Journal  
LANGUAGE: German

GI For diagram(s), see printed CA Issue.

AB Several derivs. of tricyclodecamethanal (I) were prepared and studied. I 2,4-dinitrophenylhydrazone, m. 144°, was obtained in 43% yield by the usual method. 0.15 mole I in ether solution was treated with dry HCl gas. The mixture was neutralized with K<sub>2</sub>CO<sub>3</sub> and extracted with ether, giving a 50% yield of I diethyl acetal, b11 141-3°. By treating I with 1 and 2 moles, respectively, of malonic acid in a pyridine-piperidine solution, β-tricyclodecylacrylic acid (II), m. 157°, and β-tricyclodecylglutaric acid, m. 179°, were obtained. By removing the crystalline II from the reaction mixture, a sirupy isomer of II,

b11

197-200°, could be isolated. From the crystalline II was prepared by the usual method II anilide (66% yield), m. 163°, whereas the sirupy II yielded 95% II anilide, b5 150-60°, and 84% II Me ester, b10 162-5°. The appearance of the II isomers was studied by their catalytic hydrogenation which yielded a mixture of tricyclodecylpropionic acids: a sirupy isomer, b6 166-8°, and a crystalline form, m. 81°. This was taken as evidence that the source of the isomerism lies in the tetrahydrodicyclopentadienyl ring system. Oxidation with KMnO<sub>4</sub> of the crystalline II yielded tricyclodecylcarboxylic acid (III), m. 114°, whose anilide, m. 143°, was obtained in 41% yield. The reduction with LiAlH<sub>4</sub> of I yielded a viscous mixture of alcs. which could not be resolved, although a well defined 3,5-dinitrobenzoate derivative, m. 71°, was obtained. By treating III with HN<sub>3</sub>, tricyclodecylamine (IV), b11 103°, was isolated in 49% yield; IV N-benzoyl derivative, m. 123°, was prepared in 35% yield.

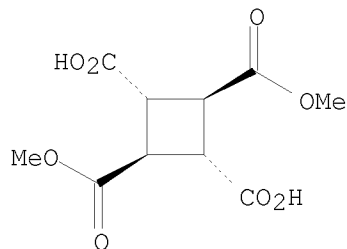
IT 2957-97-3

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 2957-97-3 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,3-dimethyl ester,  
(1α,2β,3α,4β)- (CA INDEX NAME)

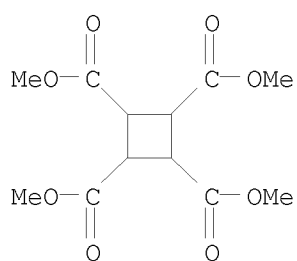
Relative stereochemistry.



L4 ANSWER 119 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

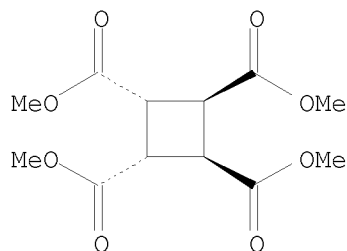
ACCESSION NUMBER: 1965:82131 CAPLUS  
DOCUMENT NUMBER: 62:82131

ORIGINAL REFERENCE NO.: 62:14523b-d  
 TITLE: New routes into the  
 cis,trans,cis-tricyclo[5.3.0.002.6]decane series  
 AUTHOR(S): Buchta, Emil; Merk, Wolfgang  
 CORPORATE SOURCE: Univ. Erlangen, Nuremberg, Germany  
 SOURCE: Naturwissenschaften (1965), 52(6), 130  
 CODEN: NATWAY; ISSN: 0028-1042  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 GI For diagram(s), see printed CA Issue.  
 AB I (R = CO<sub>2</sub>Et), m. 144-5°, reduced with LiAlH<sub>4</sub> in dry  
 tetrahydrofuran gave I (R = CH<sub>2</sub>OH, m. 62-4°, which with  
 p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl yielded I (R = p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>CH<sub>2</sub>) (II), m. 126.5-7°. II  
 with NaCH(CO<sub>2</sub>Et)<sub>2</sub> in refluxing xylene gave 82% III (R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> =  
 CO<sub>2</sub>Et) (IV), b0.03 185-7° m. 66-7.5° (petr. ether). IV  
 reduced with LiAlH<sub>4</sub> in dry tetrahydrofuran gave 75% III (R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> =  
 CH<sub>2</sub>OH), m. 242-4°. Saponification of IV gave crude III (R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> =  
 R<sub>4</sub> = CO<sub>2</sub>H), which decarboxylated at 210-20° yielded a mixture of III  
 (R<sub>1</sub> = R<sub>3</sub> = H, R<sub>2</sub> = R<sub>4</sub> = CO<sub>2</sub>H) and III (R<sub>1</sub> = R<sub>4</sub> = H, R<sub>2</sub> = R<sub>3</sub> = CO<sub>2</sub>H), m.  
 250-70° (sealed capillary).  
 IT 14495-41-1  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA  
 INDEX NAME)



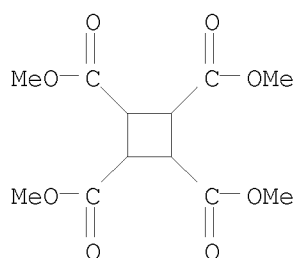
IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl  
 ester, cis,trans,cis-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 1032-95-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
 (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 120 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1965:82130 CAPLUS  
 DOCUMENT NUMBER: 62:82130

ORIGINAL REFERENCE NO.: 62:14523a-b  
 TITLE: Isomerization via transannular enolate anion  
 AUTHOR(S): Fukunaga, Tadamichi  
 CORPORATE SOURCE: E. I. du Pont de Nemours & Co., Wilmington, DE  
 SOURCE: Journal of the American Chemical Society (1965),  
 87(4), 916-17  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB A base-catalyzed isomerization reaction of the half-cage ketone (I) to the  
 iso-half-cage ketone (II) was reported. I with tert-BuOK in tert-BuOH in  
 a sealed tube at 250° quant. gave II, containing .apprx.4% I. The ir  
 and N.M.R. spectra of II were discussed.  
 IT 14495-41-1  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA  
 INDEX NAME)



L4 ANSWER 121 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1965:73878 CAPLUS  
 DOCUMENT NUMBER: 62:73878  
 ORIGINAL REFERENCE NO.: 62:13056c-h,13057a-b  
 TITLE: Synthesis of cyclobutane derivatives from unsaturated  
 fatty acid esters. Photochemical reactions of muconic  
 acid dimethyl ester and sorbic acid methyl ester  
 AUTHOR(S): Kaufmann, Hans P.; Sen Gupta, Achintya K.  
 CORPORATE SOURCE: Deut. Inst. Fettforsch., Muenster, Germany  
 SOURCE: Justus Liebigs Annalen der Chemie (1965), 681, 39-44  
 CODEN: JLACBF; ISSN: 0075-4617  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 GI For diagram(s), see printed CA Issue.  
 AB Irradiation of muconic acid di-Me ester (I) and sorbic acid Me ester (II) in  
 C6H6 in the presence of Ph2CO gave cyclobutane derivs. along with  
 cis,-trans isomers. trans,trans-I (10.5 g.) suspended in 1 l. absolute C6H6  
 containing 2 g. Ph2CO irradiated 40 h. at 20° with a Hg high pressure  
 burner (200-w.) with stirring and exclusion of O in a Jena glass flask,  
 and the solution worked up gave 2.2 g. unchanged trans,trans-I, m.  
 157°, 1.99 g. Ph2CO, m. 48°, 142 mg. cis,cis-I, m.  
 75°, 201 mg. solid, m. 55°, 210 mg. cis,trans-I, m.  
 75°, 658 mg. trans,trans-I, m. 158°; 28 mg. unidentified  
 oil, 6.92 g. III and IV, oil, and 130 mg. unidentified oil. Cis,cis-I was  
 (III) (R = CO2Me, R1 = CH:CHCO2Me) (V) (R = CO2H, R1 = CH:CHCO2H) (VI) (R = R1  
 = CO2H) (VIII) (R = CO2Me, R1 = CH:CHMe) (X) (R = Me, R1 = CH:CHCO2Me) (IV) (R  
 = R2 = CO2Me, R1 = R3 = CH:CHCO2Me) (VII) (R = R2 = CO2H, R1 = R3 =  
 CH:CHCO2H) (IX) (R = Me, R1 = CH:CHMe, R2 = CO2Me, R3 = CH:CHCO2Me) saponified  
 to cis,cis-muconic acid, m. 184°, which treated with H2SO4 gave  
 γ-carboxymethyl-δα,β-crotonolactone, m.

110°. cis,cis-I heated 4 h. in H<sub>2</sub>O gave cis,trans-I, m. 75°. cis,-trans-I was converted into trans,trans-I, m. 158°, by irradiating its MeOH solution in the presence of a trace of iodine. The III-IV mixture above in 50 cc. Et<sub>2</sub>O kept 16 h. at -30° and the precipitate (3.39 g.) filtered [the filtrate (A) was kept] and recrystd. twice from MeOH gave III, m. 43°. III (1 g.) refluxed 8 h. with 20 cc. 10% MeOH-NaOH, the solution diluted with H<sub>2</sub>O and extracted exhaustively with

EtOAc, the

extract dried and evaporated in vacuo, and the residue (0.6 g. V) in 150 cc. 2% aqueous NaOH treated portion-wise with KMnO<sub>4</sub> during .apprx.4 h. at the b.p. and worked up gave 185 mg. trans,trans,trans-VI, m. 260-4° (Me<sub>2</sub>CO petr. ether); tetra-Me ester (via CH<sub>2</sub>N<sub>2</sub>) m. 126-7° (C<sub>6</sub>H<sub>6</sub>-petr. ether). Filtrate A gave trans,trans,trans-IV, m. 57-8° (aqueous MeOH), saponified (8 h. reflux with 10% MeOH-NaOH) to trans,trans,trans-VII, m. 245° (decomposition) (EtOAc-Me<sub>2</sub>CO-petr. ether), which (0.5 g.) oxidized with KMnO<sub>4</sub> as above gave 185 mg. trans,trans,trans-VI, m. 260-4° (Me<sub>2</sub>CO-petr. ether). trans,trans-II (20 g.) in 2 l. absolute C<sub>6</sub>H<sub>6</sub> containing 5 g. Ph<sub>2</sub>CO irradiated like I 100 h. at 20° with stirring and worked up gave 14.7 g. unchanged crude trans, trans-II, 5.0 g. Ph<sub>2</sub>CO, trans,trans,trans-VIII (1.88 g. crude), colorless oil, n<sub>20</sub>D 1.4796, mol. weight (cryoscopic in C<sub>6</sub>H<sub>6</sub>) 246, saponification number 438, 441 [trans,trans,trans-VIII (1 g.) saponified by alkali and the oily saponification product oxidized with alkaline KMnO<sub>4</sub> as above gave 168 mg. trans,trans,trans-VI, m. 262°], trans,trans,trans-IX (0.99 g. crude), colorless oil, n<sub>20</sub>D 1.4841, mol. weight (cryoscopic in C<sub>6</sub>H<sub>6</sub>) 249, saponification number 440.9 [trans,trans,trans-IX (0.5 g.) saponified and

subsequently

oxidized with KMnO<sub>4</sub> gave 43 mg. trans,trans,trans-VI], and trans,trans,trans-X (2.51 g. crude), b<sub>0.15</sub> 89-92°, mol. weight (cryoscopic in C<sub>6</sub>H<sub>6</sub>) 248.6, saponification number 442.4, which (1 g.)

saponified and

oxidized with KMnO<sub>4</sub> gave 40 mg. trans,trans,trans-VI, m. 260-4°.

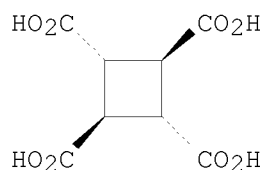
IT 720-21-8 14495-41-1 53159-92-5

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 720-21-8 CAPLUS

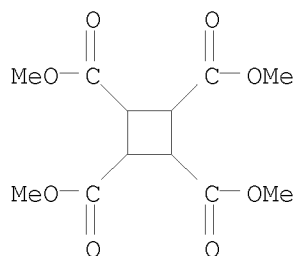
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

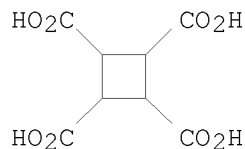


RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



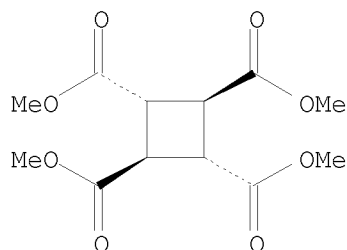
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



IT 3999-67-5P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, trans,trans,trans- 519175-45-2P,  
1,2,3,4-Cyclobutanetetracarboxylic acid, trans,trans,trans-  
RL: PREP (Preparation)  
(preparation of)

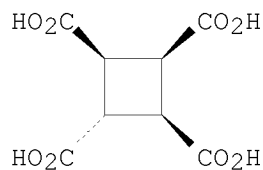
RN 3999-67-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 519175-45-2 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 122 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1965:73877 CAPLUS

DOCUMENT NUMBER: 62:73877

ORIGINAL REFERENCE NO.: 62:13056b-c

TITLE: Substituted cyclopropanones

AUTHOR(S): Breslow, Ronald; Altman, L. J.; Krebs, Adolf; Mohacsi, Erno; Murata, Ichiro; Peterson, Ruth A.; Posner, Judd  
CORPORATE SOURCE: Columbia Univ.

SOURCE: Journal of the American Chemical Society (1965),  
87(6), 1326-31

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

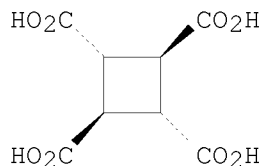
OTHER SOURCE(S): CASREACT 62:73877

AB Dipropylcyclopropanone (I) may be synthesized by addition of dichlorocarbene

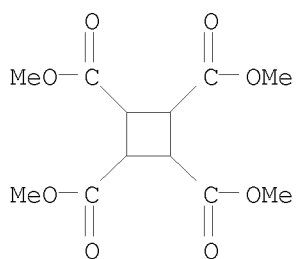
to dipropylacetylene; under some conditions a cyclobutenone derivative is also formed. Elimination of HBr from bis(bromobutyl) ketone also affords I, along with a cyclopentenone derivative. The same HBr elimination route has been used to prepare dibutylcyclopropenone, cycloheptenocyclopropenone, and cycloundecenocyclopropenone. Properties and reactions of these compds. and synthetic approaches to other cyclopropenones are described.

IT 720-21-8 14495-41-1 53159-92-5  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 720-21-8 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
 (1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

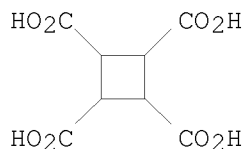
Relative stereochemistry.



RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 123 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1965:15312 CAPLUS  
 DOCUMENT NUMBER: 62:15312  
 ORIGINAL REFERENCE NO.: 62:2769b-e  
 TITLE: Photochemical studies. II. Structure of the photodimers of carbostyryl and N-methylcarbostyryl  
 AUTHOR(S): Buchardt, O.  
 CORPORATE SOURCE: Univ. Copenhagen  
 SOURCE: Acta Chemica Scandinavica (1964), 18(6), 1389-96  
 CODEN: ACHSE7; ISSN: 0904-213X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.



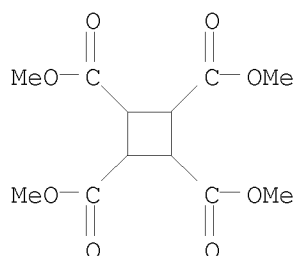
AB cf. CA 59, 13946a. Chemical and spectroscopic evidence show that the dimers of carbostyryl and N-methylcarbostyryl have the trans-head-head-cyclobutane structures (I, R = H and I, R = Me), resp. The dimers I (R = H) and I (R = Me) were ozonized and oxidized with H<sub>2</sub>O<sub>2</sub> and the products were hydrolyzed with dilute HCl and methylated directly to yield, in both cases, tetramethyl cis-trans-cis-cyclobutanetetracarboxylate. Attempts to methylate I (R = H) to give I (R = Me) were unsuccessful so that the two compds. were interrelated as follows. I (R = Me) was reduced with LiAlH<sub>4</sub> in Et<sub>2</sub>O to give II (R = Me), m. 184-5°; monomethiodide m. 185-6°; dimethiodide m. 260-70°. Reduction of I (R = H) with LiAlH<sub>4</sub> gave II (R = H), m. 125-6°, which on treatment with MeI and then aqueous KOH gave II (R = Me). The trans-head-head configuration in both compds. was established by measurement of dipole moments in C<sub>6</sub>H<sub>6</sub> [2.53 D. for II (R = H) and 5.28 D. for I (R = Me)].

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)

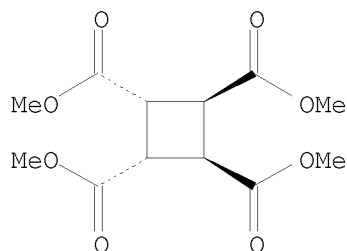


IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis-  
RL: PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

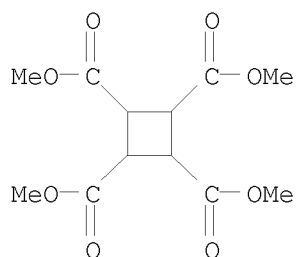
Relative stereochemistry.



L4 ANSWER 124 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1964:440150 CAPLUS  
DOCUMENT NUMBER: 61:40150  
ORIGINAL REFERENCE NO.: 61:6937c-d  
TITLE: Purification of nitrocyclohexane  
INVENTOR(S): Chandler, Ollie W.  
PATENT ASSIGNEE(S): Commercial Solvents Corp.  
SOURCE: 2 pp.

DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

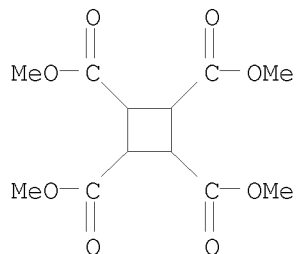
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	US 3132183		19640505	US	
AB	To a 600 g. portion of the crude product from the nitration of cyclohexane consisting of 94.7% nitrocyclohexane (I) with cyclohexanone, cyclohexyl nitrate, and nitrocyclohexane as impurities, was added 100 g. of 96% H <sub>2</sub> SO <sub>4</sub> at such a rate as to give a final temperature of 70°. The mixture was held at 70° with thorough agitation 3 hrs. After the addition of 100 ml. of H <sub>2</sub> O, the mixture was steam distilled at atmospheric pressure to give 540 g. product containing 99.5% I. Cf. Smiley, CA 53, 2243b.				
IT	14495-41-1				
	(Derived from data in the 7th Collective Formula Index (1962-1966))				
RN	14495-41-1	CAPLUS			
CN	1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)				



L4 ANSWER 125 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1964:440149 CAPLUS  
DOCUMENT NUMBER: 61:40149  
ORIGINAL REFERENCE NO.: 61:6937b-c  
TITLE: Photodimerization of fumaric acid derivatives  
INVENTOR(S): Griffin, Gary W.  
PATENT ASSIGNEE(S): American Cyanamid Co.  
SOURCE: 2 pp.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

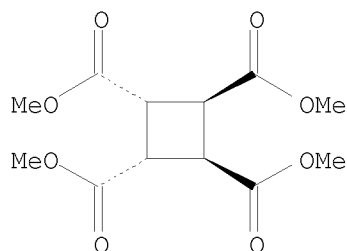
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	US 3139395		19640630	US 1961-81224	19610109
PRIORITY APPLN. INFO.:				US	19610109
AB	Cyclobutanetetracarboxylic acid or their Me esters are made by subjecting a solid layer of di-Me fumarate to light waves of 1750-4000 Å. The cyclobutane dianhydride can be made by a similar method from maleic anhydride irradiated in the solid state. Thus, a solution of di-Me fumarate in CH <sub>2</sub> Cl <sub>2</sub> is deposited on the inside wall of a glass cylinder, the CH <sub>2</sub> Cl <sub>2</sub> evaporated, and a lamp inserted in the cylinder. Irradiation is maintained for 24 hrs. with cooling to give 59% the tetramethyl ester of cis, trans, cis-1,2,3,4-cyclobutanetetracarboxylic acid, m. 144-5°. Also prepared were cis, trans, cis-1,2,3,4-tetracyanocyclobutane, m. 250° (decomposition), 1,2,3,4-cyclobutanetetracarboxylic acid dianhydride, and tetra-Me trans, trans, trans-1,2,3,4-cyclobutanetetracarboxylate, m.				

123-5°.  
 IT 14495-41-1  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



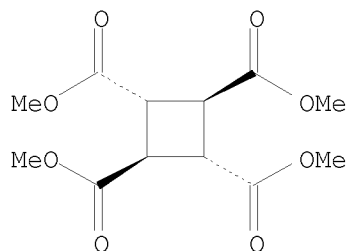
IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis, trans, cis- 3999-67-5P,  
 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, trans, trans, trans-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 1032-95-7 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ , 2 $\alpha$ , 3 $\beta$ , 4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 3999-67-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ , 2 $\beta$ , 3 $\alpha$ , 4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



ORIGINAL REFERENCE NO.: 61:4233e-h, 4234a-b  
 TITLE: Reductive cleavage of tetrasubstituted cyclobutanes:  
 possible examples of homolytic fragmentations  
 AUTHOR(S): Griffin, G. W.; Hager, R. B.  
 CORPORATE SOURCE: Yale Univ.  
 SOURCE: Rev. Chim., Acad. Rep. Populaire Roumaine (1962),  
 7(2), 901-6  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB cf. CA 57, 16417d. Several possible examples of homolytic fragmentation of tetrasubstituted cyclobutanes were considered, employing Mg-MgI<sub>2</sub> in THF (in ether-benzene the mixture was inactive) and Na in liquid NH<sub>3</sub> for the reductive cleavage. Reduction of trans,trans,trans-1,2,3,4-tetrabenzoylcyclobutane (Ia) with Mg-MgI<sub>2</sub> and subsequent hydrolysis gave high yields (61%) of dibenzoylthane instead of the expected intramol. pinacol reduction, with a dienolate (II) presumed as initial product.

#### Reduction

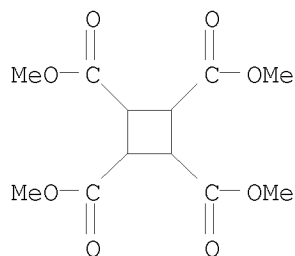
of trans,trans,trans-1,2,3,4-tetracarboxymethoxycyclobutane (Ib) with Na and hydrolysis gave only di-Me succinate (25% yield) while similar treatment of the cis,trans,cis-1,2,3,4-tetracarboxymethoxycyclobutane (III) gave the same di-Me succinate (23%). Similar treatment of the tetraketone (Ic) gave 2,5-hexanedione (53%) as major product and of the dioxodiester (Id), both 2,5-hexanedione (24%) and di-Me succinate (4%) and some Me levulinate (IV) (12%). Details were presented on the preparation of (Ic) and the unusual cage dianhydride (VI). The tetraketone (Ic), m. 139-40°, was prepared in 57% yield from the tetradiazoketone (V) by the action of HI in CHCl<sub>3</sub>. VI, m. 280° (decomposition), was prepared in 65% yield by treatment of Ie with Ac<sub>2</sub>O. Methanolysis of VI afforded Ig, and conversion of the latter through its acid chloride and diazoketone gave the trans,trans,trans-1,2-diacetyl-3,4-dicarboxymethoxycyclobutane (Id), m. 81-2°, in 83% yield from VI. Dibenzoylthane was cleaved under similar conditions to give a low yield of acetophenone and 1,2-diphenyl-1,2-dihydroxycyclobutane, m. 147-50°. A photochem. reductive cleavage of Ia to dibenzoylthane was accomplished by irradiating in benzene in Pyrex glass vessels in the presence of benzophenone as photosensitizer. The same photosensitizer was used for photochem. reduction of dibenzoylethylene, using iso-PrOH, cyclohexane, or SnBu<sub>3</sub>H as H donors. Several possible interpretations were presented on the mechanism of the apparently general cleavage reaction. 28 refs.

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

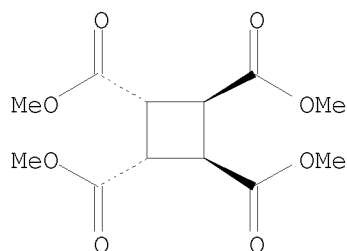
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



IT 1032-95-7, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis- 3999-67-5,  
 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, trans,trans,trans-  
 (reductive cleavage of)

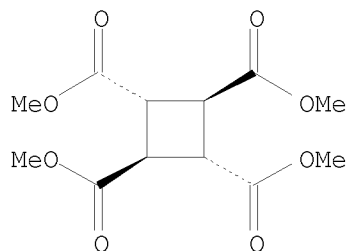
RN 1032-95-7 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.

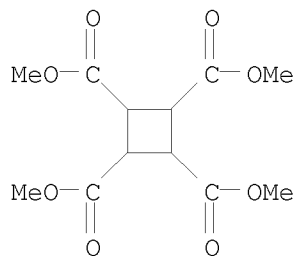


RN 3999-67-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 127 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1964:425031 CAPLUS  
DOCUMENT NUMBER: 61:25031  
ORIGINAL REFERENCE NO.: 61:4233d-e  
TITLE: Cyclobutane compounds. I. Formation of a four-membered ring during the electrophilic addition of hydrogen bromide to allene  
AUTHOR(S): Griesbaum, Karl  
CORPORATE SOURCE: Esso Res. & Eng. Co., Linden, NJ  
SOURCE: Journal of the American Chemical Society (1964), 86(11), 2301-3  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
GI For diagram(s), see printed CA Issue.  
AB The reaction of equimolar amts. of HBr and CH<sub>2</sub>:C:CH<sub>2</sub> (I) produced (yields from gas-liquid chromatography) 13% CH<sub>2</sub>:CBrMe, 35% Me<sub>2</sub>CBr<sub>2</sub>, 44% trans-1,3-dibromo-1,3-dimethylcyclobutane (II), m. 54-5°,  $\delta$  2.13 (singlet) and 3.19 (singlet) p.p.m., and 8% cis-1,3-dibromo-1,3-dimethylcyclobutane (?). Reduction of II with Bu<sub>3</sub>SnH produced a mixture of cis- and trans-1,3-dimethylcyclobutane. The formation of II represented the first example of a cationically induced cyclodimerization of I.  
IT 14495-41-1  
(Derived from data in the 7th Collective Formula Index (1962-1966))  
RN 14495-41-1 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 128 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1964:52579 CAPLUS

DOCUMENT NUMBER: 60:52579

ORIGINAL REFERENCE NO.: 60:9210e-h,9211a

TITLE: Investigations in the cyclobutane series. XII. Two stereoisomeric dimers of cyclobutadiene

AUTHOR(S): Avram, Margarete; Dinulescu, Ilie G.; Marica, Elise; Mateescu, Georg; Sliam, Elvira; Nenitzescu, Costin D.

CORPORATE SOURCE: Acad. R. V. R., Bucharest, Rom.

SOURCE: Chemische Berichte (1964), 97(2), 382-9

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 60:52579

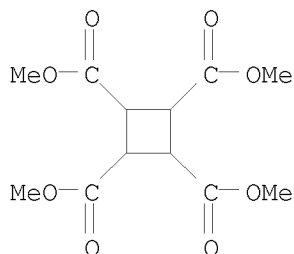
GI For diagram(s), see printed CA Issue.

AB The elimination of Cl from cis-3,4-dichlorobutene (I) with Na-Hg in Et<sub>2</sub>O yielded syn-tricyclo[4.2.0.02.5]octa-3,7-diene (II). I with Li-Hg gave similarly predominantly the anti isomer (III) of II. The ozone cleavage and several derivs. of II and III are described. I in Et<sub>2</sub>O shaken 40 hrs. with 0.5% Na-Hg, and the solution treated with saturated aqueous AgNO<sub>3</sub> yielded 46-51%

AgNO<sub>3</sub> complex (IV) of II, m. 138-40°. IV shaken at 0° with saturated aqueous NaCl yielded 65-9% II, b<sub>40</sub> 45°, containing 2-3% cyclooctatetraene (V). I in Et<sub>2</sub>O shaken 8-10 hrs. with 0.5% Li-Hg, and the solution shaken with saturated aqueous AgNO<sub>3</sub> gave 55% AgNO<sub>3</sub>-complex (VI) of III,

m. 152° (EtOH). VI shaken at 0° with saturated aqueous NaCl yielded 51% III, b<sub>40</sub> 40°, m. .apprx.-15°. II in 90% AcOH ozonized 8 hrs. and treated 36 hrs. with 30% H<sub>2</sub>O<sub>2</sub> yielded 77% all-cis-1,2,3,4-tetracarboxymethoxycyclobutane (VII), m. 202°. III yielded similarly 85% cis-trans-trans-isomer of VII, m. 147° (C<sub>6</sub>H<sub>6</sub>). III in MeOH hydrogenated over 30% Pd-C yielded anti-tricyclo[4.2.0.02.5]-octane (VIII), b<sub>30</sub> 53°. VIII heated 8-10 hrs. under argon at 150° gave 39% dimeric 1,5-cyclooctadiene (IX), m. 121° (sealed capillary), and a liquid hydrocarbon C<sub>8</sub>H<sub>12</sub>, isolated as the yellow PdCl<sub>2</sub> complex, m. 205-10° (decomposition) (AcOH). II hydrogenated similarly gave the syn isomer (X) of IX, which, rearranged thermally, yielded 12.5% IX. II in CH<sub>2</sub>Cl<sub>2</sub> treated at 0° with Br gave 77% 3,4,7,8-tetra-Br derivative (XI) of X, pale yellow viscous liquid, which deposited on standing a hexabromide, m. 168° (MeOH). III yielded similarly 94% 3,4,7,8-tetra-Br derivative (XII) of XI, m. 172° (heptane). XII in Et<sub>2</sub>O shaken 10 hrs. with 0.5% Li-Hg gave 52% III. XII in PhCl heated 2 hrs. at 130-40° gave 77.5% C<sub>8</sub>H<sub>8</sub>Br<sub>4</sub>, m. 136-7° (AcOH). XII and 2,5-diphenyl-3,4-benzofuran (XIII) in Et<sub>2</sub>O shaken 16 hrs. with 0.5% Li-Hg, the precipitate treated with maleic anhydride, and the product refluxed 15 min. with 5% KOH-MeOH yielded 43% adduct, m. 252°. 1,2,3,4-Tetrabromocyclobutane, XIII, and 0.5% Li-Hg in Et<sub>2</sub>O yielded similarly 6% adduct, m. 288-90° (AcOH). The infrared absorption spectra of II, III, VIII, and X are recorded.

IT 14495-41-1P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, stereoisomers  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 129 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1963:435251 CAPLUS

DOCUMENT NUMBER: 59:35251

ORIGINAL REFERENCE NO.: 59:6273e-h,6274a

TITLE: The tricyclo[5.3.0.02,6]decane system. Photodimers of cyclopentenone

AUTHOR(S): Eaton, Philip E.

CORPORATE SOURCE: Univ. of California, Berkeley

SOURCE: Journal of the American Chemical Society (1962), 84(12), 2344-8

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 59:35251

GI For diagram(s), see printed CA Issue.

AB The photodimers of cyclopentenone (I) were shown to be II and III. II was converted by 2 paths into cis,trans,cis-tricyclo[5.3.0.02,6]deca-4,9-diene-3,8-dione (IV). The cis,trans,cis assignment for II, III, and other derivs. was based partially on NMR data. Irradiation of I 24 h. with a Hg arc lamp through Pyrex glass gave 43-49% II, m. 125-6.5° (sublimed at 0.5 mm. and crystallized from CH<sub>2</sub>Cl<sub>2</sub>-hexane) and 37-45% III, m. 66-7° (hexane). Wolff-Kishner reduction of II and III gave cis,trans,cis-tricyclo[5.3.0.02,6]decane, identified by gas chromatog. II with monoperoxyphthalic acid in ether yielded 60% V, m. 156-7° (C<sub>6</sub>H<sub>6</sub>-CCl<sub>4</sub>). III similarly gave 55% VI, m. 103-5°. Methanolysis of V over polystyrenesulfonic acid resin was accomplished without rearrangement to give putative 1,3-bis(2-carbomethoxyethyl)cyclobutane-2,4-diol,  $\lambda$  2.87 (OH), 5.77  $\mu$  (ester CO), which reverted to V on attempted distillation VI similarly yielded 1,2-bis(2-carbomethoxyethyl)cyclobutane-3,4-diol, oxidizable with Pb(OAc)<sub>4</sub>. II with isopropenyl acetate and p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>H gave 58 (crystallized from hexane) or 26% (chromatographed on neutral Al<sub>2</sub>O<sub>3</sub>) dienol acetate (VII), m. 95-6°, which with Na<sub>2</sub>CO<sub>3</sub> in aqueous MeOH reverted to II. VII (16.00 g.) in CH<sub>2</sub>Cl<sub>2</sub> at -65° with 20.65 g. Br yielded 13.4 g. putative tetrabromide, which with tert-BuOK in tert-BuOH refluxed overnight yielded 36% IV, m. 231-3°. II with (HOCH<sub>2</sub>)<sub>2</sub> and HCl gave 91% bis(ethylene ketal), m. 143-3.5°, which (54.5 g.) in THF with 174 g. pyridinium bromide perbromide yielded 54% dibromo derivative (VIII), m. 200° (decomposition). VIII with tert-BuOK in Me<sub>2</sub>SO (not in tert-BuOH) gave 84% bis(ethylene ketal), m. 177-8° (hexane), of IV, which with 0.1N HCl in THF yielded 91% IV. Hydrogenation of IV in AcOH over Pd-C yielded II. IV in aqueous AcOH with ozone and then H<sub>2</sub>O<sub>2</sub> followed by treatment

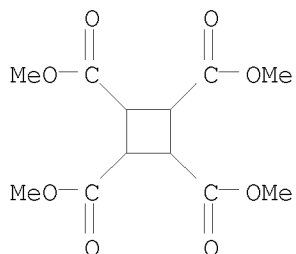
with CH<sub>2</sub>N<sub>2</sub> afforded 28% cis,trans,cis-tetracarbomethoxycyclobutane, m. 143-4°. NMR spectra of IV-VI were given.

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



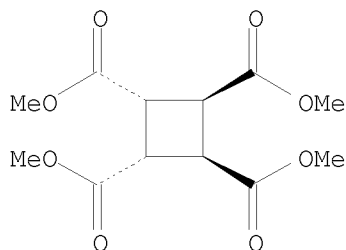
IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis-

RL: PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 130 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1963:435250 CAPLUS

DOCUMENT NUMBER: 59:35250

ORIGINAL REFERENCE NO.: 59:6273a-e

TITLE: Behavior of norbornadiene and its 7-alkoxy derivatives towards organolithium reagents

AUTHOR(S): Wittig, Georg; Otten, Joachim

CORPORATE SOURCE: Univ. Heidelberg, Germany

SOURCE: Tetrahedron Letters (1963) 601-6

CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

LANGUAGE: German

GI For diagram(s), see printed CA Issue.

AB cf. CA 55, 8455c. Treatment of norbornadiene (I) in Et<sub>2</sub>O with PhLi under various conditions gave the metalated product (II), the 2 addition compds. (III, IV, R = Li, R' = Ph) and dimeric norbornadiene, b<sub>16</sub> 121-4°, m. 33°, consisting of a mixture of 2 isomeric compds. The reaction of I with organolithium compds., R'Li, took place relatively slowly, in days at room temperature and in 24 hrs. at 70° and was still more retarded in petr. ether. I treated 6 days with Me<sub>2</sub>CHLi in petr. ether at



20° and the mixture hydrolyzed yielded 50% IV (R = H, R' = Me2CH) together with 34% I. Similarly, I treated 2 days in petr. ether at 20° with Me3CLi gave 62% IV (R = H, R' = Me3C) and unchanged I. On the contrary, the addition of R'Li in petr. ether at -20° and hydrolysis of the precipitated material yielded 87% product (VII, R = CMe3, R'

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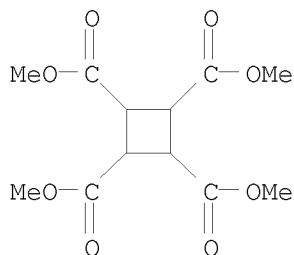
Me2CH), b13 91°, n20D 1.4558, and 91% VII (R = CMe3, R' = Me3C), b13 106°, n20D 1.4616. The mixture prior to hydrolysis heated 2 hrs. at 100° gave VIII (R = Me2CH) (IX), b60 76°, n25D 1.4661, and 60% VIII (R = Me3C), b20 64°, n20D 1.4718. IX hydrogenated in the presence of prereduced PtO2 with adsorption of 1.98 moles H gave 7-isopropylbornane, b. 165°, n20D 1.4580, identical with material prepared by treatment of 7-bromobornane with Me2CHBr and Na. Similarly, V (R = Me) treated with Me2CHLi in petr. ether gave an adduct, hydrolyzed to yield 94% VII (R = Me, R' = Me2CH). The mixture heated prior to hydrolysis gave about 50% VIII (R' = Me2CH). V(R = Me3C) (VI) in moist Et2O saturated with dry HCl gave 68% VIII (R' = Cl), b13 46°, n25D 1.5060, m. -16 to -14°, refluxed 4 hrs. in MeOH to give 68% V (R = Me), b18 44°, n20D 1.4792. VI treated with MeOH or EtOH in the presence of a trace of HClO4 yielded 66% V (R = Me) and 82% V (R = Et), resp. The structure of the 7-substituted norbornadienes was conformed by the nuclear magnetic resonance signals for olefin H, bridgehead H, bridge H, and other H atoms: VIII, R = Me2CH, 3.27, 3.49, 6.64, 7.80-8.90, 9.22, 9.31; VIII, R = Me3C, 3.14, 3.60, 6.58, 7.58, 9.21; VIII, R = Cl, 3.26, 3.40, 6.38, 5.83; V, R = Me, 3.45, 3.59, 6.54, 6.88; V, R = Et, 3.44, 3.59, 6.38-6.92, 8.93. The above observations suggest that the reactions take place through the 7-norbornadienyl cation (Winstein and Ordroneau, CA 55, 4383i).

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 131 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1963:72985 CAPLUS

DOCUMENT NUMBER: 58:72985

ORIGINAL REFERENCE NO.: 58:12431g-h

TITLE: The photodimerization of monomethyl fumarate

AUTHOR(S): Sadeh, T.; Schmidt, G. M. J.

CORPORATE SOURCE: Weismann Inst. Sci., Rehovoth, Israel

SOURCE: Journal of the American Chemical Society (1962), 84, 3970

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB Ultraviolet irradiation of a powdered sample of monomethyl fumarate yielded the dimer (I), m. 153-4°. Treatment with SOCl2 gave its anhydride, m. 144°. Treatment of both the material and its anhydride with

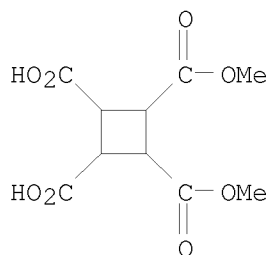
methanolic HCl gave tetramethyl cyclobutane-1,2,3,4-tetracarboxylate m. 144-5°. The conformation of the dimer of monomethyl fumarate was therefore established as having symmetry m, the two acid groups being cis to each other and trans to the two ester groups.

IT 91109-83-0

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 91109-83-0 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester (CA INDEX NAME)



L4 ANSWER 132 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1963:72984 CAPLUS

DOCUMENT NUMBER: 58:72984

ORIGINAL REFERENCE NO.: 58:12430f-h,12431a-g

TITLE: Syntheses of four-membered rings by the photosensitized cycloaddition of dimethylmaleic anhydride to olefins

AUTHOR(S): Schenck, Guenther Otto; Hartmann, Willy; Steinmetz, Reinhard

CORPORATE SOURCE: Max Planck Inst. Kohlenforschung, Muelheim/Ruhr, Germany

SOURCE: Chemische Berichte (1963), 96, 498-508  
CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 58:72984

GI For diagram(s), see printed CA Issue.

AB The benzophenone-sensitized cycloaddition of dimethylmaleic anhydride (I) to thiophene and 7 olefins of various types yielded smoothly the corresponding cyclobutane derivs. The ClCH:CCl<sub>2</sub>-I adduct was converted by HCl elimination to a cyclobutene derivative, the isomerization of which yielded (CCl:CM<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub> (II). All irradiations were performed under N. II (6 g.) and 4 g. BzPh in 150 cc. thiophene irradiated 48 hrs. at 20° with a Hg-high pressure 125-w. lamp and evaporated, and the black-brown, tacky residue treated with Et<sub>2</sub>O left 2.8 g. III, m. 158-9° (sublimed at 130°/0.2 mm.); the mother liquor evaporated, and the residue chromatographed from C<sub>6</sub>H<sub>6</sub> on silica gel yielded 3.9 g. unreacted II and 3.7 g. BzPh. The rate of formation, k, of III is 0.22 mole + 10<sup>-3</sup>/hr. I (6 g.) and 4 g. BzPh in 180 cc. cyclohexene irradiated 24 hrs. and evaporated, and the residual light yellow oil (12.7 g.) dissolved in a little dry Et<sub>2</sub>O and repptd. with cold petr. ether gave 4.7 g. 7,8-dimethylbicyclo[4.2.0]octane-7,8-dicarboxylic anhydride, m. 66-8° (Et<sub>2</sub>-petr. ether), k 0.94; 3.0 g. I and 3.8 g. BzPh were recovered unchanged. A similar run without BzPh gave 1.5 g. adduct, which was dissolved in cold 2N NaOH and acidified with dilute HCl to give the dicarboxylic acid, m. 188-9° (H<sub>2</sub>O), sublimes from 160°; bis(p-bromophenacyl ester) m. 158°. I (6 g.) and 4 g. BzPh in 150 cc. CH<sub>2</sub>:CM<sub>2</sub>CH<sub>2</sub>CM<sub>2</sub> irradiated 45 hrs. at 20° yielded 7.2 g. IV (R = R<sub>1</sub> = H, R<sub>2</sub> = Me<sub>3</sub>CCH<sub>2</sub>, R<sub>3</sub> = Me), m. 100-2° (aqueous MeOH), k 0.7; 2.15 g. I and 3.45 g. BzPh were recovered unchanged. I (8 g.) and 4 g. BzPh in

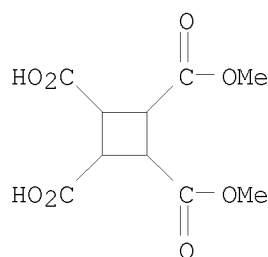
150 cc. (Me<sub>2</sub>C:)<sub>2</sub> irradiated 24 hrs. at 50° and evaporated, and the residual light yellow oil (13.3 g.) dissolved in 80 cc. 2N NaOH, washed with Et<sub>2</sub>O, and acidified with 2N HCl yielded 2.8 g. IV (R = R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> = Me), sublimes from 85° (aqueous MeOH), k 0.56. I (6 g.) and 4 g. BzPh in 150 cc. Me<sub>2</sub>C:CHCl irradiated 30 hrs. at 20° and evaporated, and the brown residue dissolved in Et<sub>2</sub>O and reprecipitated with petr. ether gave 2.2 g. IV (R = R<sub>1</sub> = Me, R<sub>2</sub> = Cl, R<sub>3</sub> = H), m. 159-60° (Et<sub>2</sub>O), k 0.3; 4.05 g. I and 3.1 g. BzPh were recovered unchanged. A similar run without BzPh gave during 30 hrs. 0.24 g. adduct. I (3 g.) and 4 g. BzPh in 150 cc. cis(CHCl:)<sub>2</sub> irradiated 24 hrs. at 10° and evaporated, and the residue dissolved in 0 cc. Et<sub>2</sub>O and kept with 50 cc. ligroine (b. 60-80°) gave 1.1 g. IV (R = R<sub>2</sub> = Cl, R<sub>1</sub> = R<sub>3</sub> = H) (V) (1,2-Cl atoms cis) m. 142° (CHCl<sub>3</sub>), k 0.26; 2.2 g. I and 3.5 g. BzPh were recovered unchanged. A similar run without BzPh gave 0.8 g. adduct. I (3 g.) and 4 g. BzPh in 150 cc. trans-(CHCl:)<sub>2</sub> irradiated 24 hrs. at 10° yielded 160 mg. dimeric I; the filtrate worked up in the usual manner gave 0.8 g. trans-1,2-chloro analog of V, m. 110-11° (C<sub>6</sub>H<sub>6</sub>), k 0.20 g.; 2.3 g. I and 3.0 g. BzPh were recovered unchanged. A similar run without BzPh did not give adduct. I (8 g.) and 4 g. BzPh in 150 cc. ClCH:CCl<sub>2</sub> irradiated 32 hrs. at 10° gave 70 mg. dimeric I and 5.6 g. IV (R = R<sub>1</sub> = R<sub>2</sub> = Cl, R<sub>3</sub> = H) (VI), m. 172-3° (Et<sub>2</sub>O), k 0.77; 4.95 g. I and 3.2 g. BzPh were recovered unchanged. A similar run without BzPh yielded 3.6 g. VI. VI (17 g.) in 50 cc. absolute EtOH treated dropwise during 10 min. with 18 g. KOH in 150 cc. absolute EtOH, heated 0.5 hr. on the water bath, and filtered, and the residue treated with 30 cc. H<sub>2</sub>O and 15 cc. concentrated HCl gave 11.4 g. 1,2-dimethyl-3,4-dichloro-3-cyclobutene-1,2-dicarboxylic acid (VII), m. 172° (Et<sub>2</sub>O-petr. ether). A similar run with KOEt-EtOH gave in addition to VII the mono-Et ester of VII, m. 108°. VII with CH<sub>2</sub>N<sub>2</sub> yielded the di-Me ester (VIII), m. 96-7° (Et<sub>2</sub>O). VIII reduced with LiAlH<sub>4</sub> gave 49% 1,2-dimethyl-1,2-bis(hydroxymethyl)-3,4-dichloro-3-cyclobutene (IX), m. 76-8°. VI (2.6 g.) in dry Et<sub>2</sub>O added dropwise during 15 min. to 420 mg. LiAlH<sub>4</sub> in 100 cc. dry Et<sub>2</sub>O, kept 0.5 hr. at room temperature, and worked up yielded 220 mg. 1,2-dimethyl-1,2-bis(hydroxymethyl)-3,3,4-trichlorocyclobutane (X), m. 203° (decomposition) (Et<sub>2</sub>O-petr. ether). X (200 mg.) in 20 cc. 2N NaOH heated 10 min. on a water bath, cooled, and filtered gave 23 mg. IX. VIII (2 g.) heated 20 min. at 140° and distilled yielded 100% di-Me ester (XI) of II, b<sub>0.2</sub> 53-4°, n<sub>D</sub> 1.4989, d<sub>10</sub> 1.252. XI (2 g.) and 10 cc. 2N NaOH refluxed 25 min., cooled, and acidified with concentrated HCl yielded 1.5 g. II, m. 164-5° (C<sub>6</sub>H<sub>6</sub>). II (2.4 g.) and 4 g. NaOH in 125 cc. MeOH hydrogenated 3.5 hrs. at room temperature and 1 hr. at 80° over Raney Ni, filtered, and evaporated, and the residue dissolved in 30 cc. H<sub>2</sub>O and acidified with concentrated HCl yielded 1.35 g. meso-(CH<sub>2</sub>CHMeCO<sub>2</sub>H)<sub>2</sub>, m. 142-3° (H<sub>2</sub>O). II (240 mg.) in 10 cc. 0.1N NaOH heated 75 min. at 240° in a sealed tube, cooled, acidified with concentrated HCl, and concentrated gave up to 10% MeC.tplbond.CC(Cl):C(CO<sub>2</sub>H)Me, m. 124-6° (H<sub>2</sub>O). BzPh in 180 cc. furan irradiated 44 hrs. at 12° and evaporated gave 5.2 g. XII, m. 105-6° (aqueous MeOH). XII (1.25 g.) in 150 cc. MeOH hydrogenated under ambient conditions over Raney Ni yielded 1.0 g. dihydro derivative of XII, m. 113-15° (MeOH), sublimes from 80°. The ultraviolet absorption spectra of III and Et

IT 91109-83-0P, 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester

RL: PREP (Preparation)  
(preparation of)

RN 91109-83-0 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2-dimethyl ester (CA INDEX NAME)



L4 ANSWER 133 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:473604 CAPLUS

DOCUMENT NUMBER: 57:73604

ORIGINAL REFERENCE NO.: 57:14619b-d

TITLE: Mechanism of formation of basic amino acids (ornithine) and hydroxyamino acids (serine, homoserine) by photochemical synthesis

AUTHOR(S): Ferrari, G.; Passera, C.

CORPORATE SOURCE: Univ. Padua, Italy

SOURCE: Photochemistry and Photobiology (1962), 1, 155-8  
CODEN: PHCBAP; ISSN: 0031-8655

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

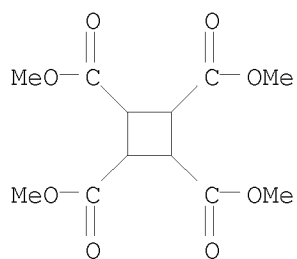
AB Dicarboxylic diamino acids, monocarboxylic diamino acids, and hydroxyamino acids were synthesized in a study of the action of ultraviolet rays on diluted solns. of inorg. N compds. and ternary organic substances. Hydroxyamino acids are formed by recombination of OH radicals from H<sub>2</sub>O<sub>2</sub> with amino-group-containing radicals from primary amino acids.  $\alpha,\delta$ -Diaminoadipic acid, arising by recombination of amino-group-containing radicals from aspartic acid, yields ornithine by further photochem. decarboxylation. The mechanism of formation is discussed.

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 134 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:473603 CAPLUS

DOCUMENT NUMBER: 57:73603

ORIGINAL REFERENCE NO.: 57:14619a-b

TITLE: Synthesis of  $\gamma$ -keto acids by photochemical reaction

AUTHOR(S): Odaira, Yoshinobu; Tominaga, Tamotsu; Pak, Cheng King; Tsutsumi, Shigeru

SOURCE: Technology Reports of the Osaka University (1962), 12(Nos. 488-507), 193-7

DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

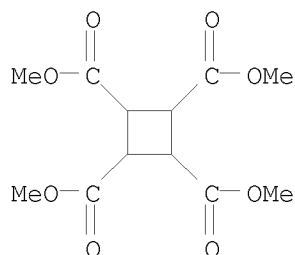
AB The photochem. addition reactions of some aldehydes and di-Me fumarate(I) and maleate (II) were studied. Thus, 4-oxoheptanoic acid was prepared from 2 moles butyraldehyde and 1 mole II, exposed to a lowpressure Hg lamp at room temperature for 100 hrs. Increase in the mole ratio of aldehyde to ester increased the formation of the 1:1 ketodiester adduct except in the case of HCHO. Irradiation of I in the solid state yielded a photodimer identified as cis,trans,cis-1,2,3,4-tetracarbomethoxycyclobutane.

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis-

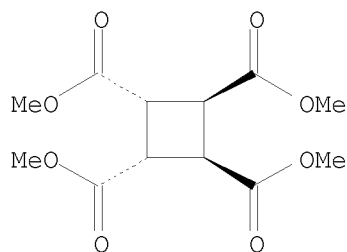
RL: PREP (Preparation)

(formation by irradiation of di-Me fumarate)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 135 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:436298 CAPLUS

DOCUMENT NUMBER: 57:36298

ORIGINAL REFERENCE NO.: 57:7239c-h

TITLE: Photosensitized cyclodimerization of coumarin

AUTHOR(S): Schenck, Guenther Otto; Wilucki, Iugeborg v.; Krauch, Carl Heinrich

CORPORATE SOURCE: Max-Planck-Inst. Kohleforschung, Muehlheim, Germany

SOURCE: Chemische Berichte (1962), 95, 1409-12

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 57:36298

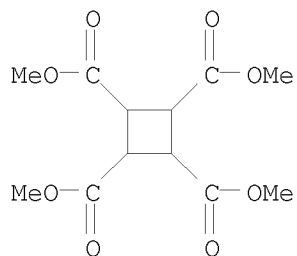
GI For diagram(s), see printed CA Issue.

AB Coumarin (I) without sensitization yielded II, with sensitization III and IV, upon irradiation. The 2 reactions do not have common intermediates. I (29 g.), m. 67-70°, and 5 g. BzPh, m. 48°, in 250 cc. C6H6 irradiated 60 hrs. at 10-15° gave 27.9 g. III, m. 176.5° (EtOH, C6H6, AcOH and sublimed in vacuo); the mother liquor yielded 0.45 g. IV, m. 320-5° (sublimed); 4.57 g. BzPh was recovered. I (29 g.) in 250 cc. C6H6 irradiated 125 hrs. in glass or 45 hrs. in quartz gave only unchanged I. I (12.3 g.) in 110 cc. absolute EtOH irradiated 46 hrs. gave 1.17 g. II, m. 260° (decomposition) (AcOH and sublimed in vacuo). I (11.54 g.) and 3.08 g. BzPh in 150 cc. absolute EtOH irradiated 16 hrs. yielded 2.2 g. III. I (135 g.) irradiated 30 hrs. at 71-5° with an immersed quartz lamp gave 0.45 g. I. III (13 g.) in 700 cc. 80% AcOH ozonized 10 hrs. at 15° with about 25 g. O3/hr., treated with cooling with 250 cc. 10% H2O2, kept 2 days, evaporated, the residue treated with Et2O-CH2N2, and chromatographed on silica gel yielded 70.8% tetra-Me cis-trans-cis-cyclobutanetetracarboxylate, m. 144.5°. III (3 g.) in 50 cc. 10% aqueous NaOH acidified with 10% HCl and filtered gave 3.5 g. dihydroxy- $\mu$ -truxinic acid (V), m. 175° after melting with bubbling at 95° and resolidification at 150°. V refluxed 2 hrs. with Ac2O gave III. V (3.32 g.) and CH2N2-Et2O yielded 3.2 g. di-Me ester of V. m. 160° (decomposition). III (5 g.) with 9 g. Me2SO4 in 41 cc. 2N NaOH yielded 3.04 g. Me ester (VI) of dimethoxy- $\mu$ -truxinic acid (VII), m. 137-8° (decomposition) (MeOH); the filtrate from the VI acidified with 10% HCl gave 3.07 g. VII, m. 200° (decomposition) (aqueous MeOH).

IT 14495-41-1  
(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



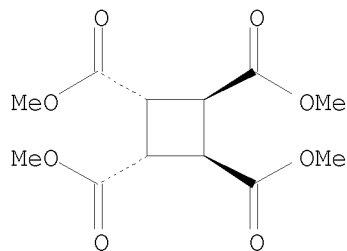
IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis-

RL: PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 136 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:429516 CAPLUS  
DOCUMENT NUMBER: 57:29516  
ORIGINAL REFERENCE NO.: 57:5853f-g  
TITLE: Preparation of some 2,3:6,7-dibenzobiphenylenes  
AUTHOR(S): Bruce, J. Malcolm  
CORPORATE SOURCE: Univ. Manchester, UK  
SOURCE: Journal of the Chemical Society (1962) 2782-5  
CODEN: JCSOA9; ISSN: 0368-1769  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

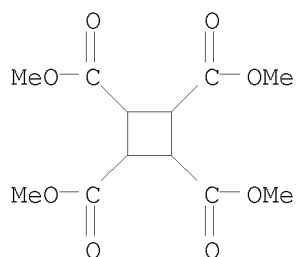
AB The photodimer (I) of 1,4-naphthoquinone was converted into 1,4,5,8-tetrahydroxy-2,3:6,7-dibenzobiphenylene, and the tetramethyl ether and tetraacetate of this compound were prepared. Evidence is presented concerning structure of the enolic form of the photodimer (II) of 2,3-dimethyl-1,4-benzoquinone.

IT 14495-41-1

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



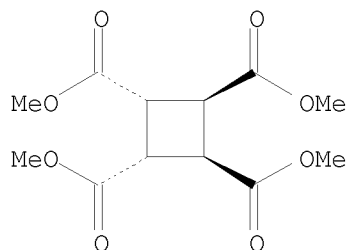
IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis-

RL: PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, (1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

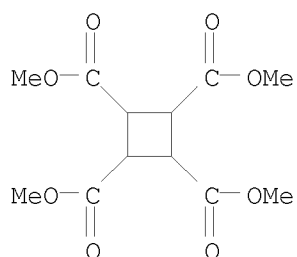
Relative stereochemistry.



L4 ANSWER 137 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:429515 CAPLUS  
DOCUMENT NUMBER: 57:29515  
ORIGINAL REFERENCE NO.: 57:5853e-f  
TITLE: Condensed cyclobutane aromatic compounds. XXI. Adducts

of benzocyclobutadienes with 1,3-diphenylisobenzofuran  
 AUTHOR(S): Cava, M. P.; Pohlke, R.  
 CORPORATE SOURCE: Ohio State Univ., Columbus, OH, USA  
 SOURCE: Journal of Organic Chemistry (1962), 27(5), 1564-7  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Diphenylisobenzofuran has been found to be an excellent trapping agent for benzocyclobutadiene and for halogenated benzocyclobutadienes. Some chemical transformations of the adducts obtained are reported.  
 IT 14495-41-1  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 138 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:403716 CAPLUS

DOCUMENT NUMBER: 57:3716

ORIGINAL REFERENCE NO.: 57:671i,672a-e

TITLE: The chemistry of photodimers of maleic and fumaric acids derivatives. III.  
 cis,trans,cis-1,2,3,4-Tetracyanocyclobutane; possible precursors for tetramethylenecyclobutane

AUTHOR(S): Griffin, G. W.; Basinski, J. E.; Peterson, L. I.

CORPORATE SOURCE: Yale Univ.

SOURCE: Journal of the American Chemical Society (1962), 84, 1012-15

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 57:3716

GI For diagram(s), see printed CA Issue.

AB The photodimerization of fumaronitrile (I) to cis-trans,cis-tetracyanocyclobutane (II) in the solid state has been studied and the stereochem. of II correlated with the crystal lattice structure of I. The chemical of II has been investigated and a series of compds. derived from I have been synthesized. I deposited on the inside of a 1-l. graduated cylinder by evaporating a solution of I under N, the deposit irradiated 1 wk with a germicidal lamp and extracted with hot Et2O left 2.1 g. II, p. 250° (decomposition) (MeCN). II (0.75 g.) added to 20 cc. AcOH and 1 cc. concentrated HCl, heated to solution, concentrated, and filtered yielded 0.393 g. III, m. 325° (Me2CO); the filtrate treated with CH2N2-Et2O gave the tetra-CO2Me analog of II, m. 144-5°. II (8.0 g.), 150 cc. Ac2O, and 0.70 g. PtO2 hydrogenated 1 wk at about 25° yielded 4.0 g. tetra-AcNHCH2 analog (IV) of II, m. 278-9° (H2O). IV (6.0 g.) and 35 cc. concentrated HCl heated 3 h. and evaporated, and the residue sublimed at



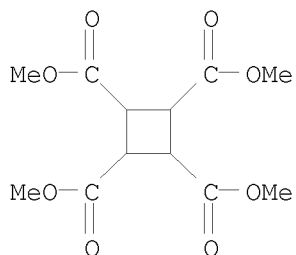
80°/0.5 mm. gave the extremely hygroscopic tetra-H<sub>2</sub>NCH<sub>2</sub> analog (V) of II. V in 10% aqueous NaOH with BzCl yielded the tetra-BzNHCH<sub>2</sub> analog of II, m. 302-3° (hot EtOH). Tetraacid chloride (VI) of 1,2,3,4-cyclobutanecarboxylic acid, m. 76-7° (hexane), from the acid with PCl<sub>5</sub> in 200 cc. C<sub>6</sub>H<sub>6</sub> treated 4 h. with stirring with gaseous Me<sub>2</sub>NH, heated to boiling, filtered, and evaporated gave 5.1 g. tetra-CONMe<sub>2</sub> analog (VII) of II, m. 194-5° (Et<sub>2</sub>O-C<sub>6</sub>H<sub>6</sub>). VII (5.1 g.) in 100 cc. Et<sub>2</sub>O and 100 cc. C<sub>6</sub>H<sub>6</sub> refluxed through a Soxhlet thimble charged with 1.7 g. LiAlH<sub>4</sub>, refluxed 1 h., and worked up gave 3.1 g. Me<sub>2</sub>NCH<sub>2</sub> analog (VIII) of II, b<sub>0.05</sub> 110-12°. MeI (4.0 g.) and 1.0 g. VIII in 50 cc. absolute MeOH refluxed overnight and cooled yielded 2.4 g. tetramethiodide of VIII. VIII (4.0 g.) added with stirring and cooling to 60% H<sub>2</sub>O<sub>2</sub>, warmed after 6 h. to room temperature, kept overnight, heated with a small amount of Pt-C, filtered, and treated with picric acid gave the picrate of the tetra-N-oxide of VIII, m. 219-20°. VI (3 g.) in 150 cc. C<sub>6</sub>H<sub>6</sub> treated with gaseous NH<sub>3</sub> gave some III.

IT 14495-41-1 94253-09-5

(Derived from data in the 7th Collective Formula Index (1962-1966))

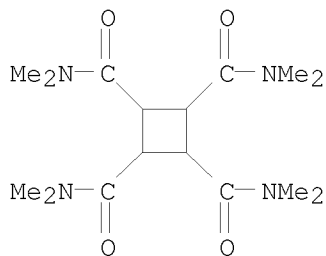
RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



RN 94253-09-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxamide, N<sub>1</sub>,N<sub>1</sub>,N<sub>2</sub>,N<sub>2</sub>,N<sub>3</sub>,N<sub>3</sub>,N<sub>4</sub>,N<sub>4</sub>-octamethyl- (CA INDEX NAME)

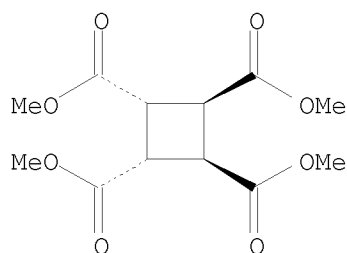


IT 1032-95-7P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester, cis,trans,cis- 905821-43-4P,  
1,2,3,4-Cyclobutanetetracarboxamide,  
N,N,N',N',N'',N'',N''',N'''-octamethyl-, cis,trans,cis-  
RL: PREP (Preparation)  
(preparation of)

RN 1032-95-7 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\beta$ ,4 $\beta$ )- (CA INDEX NAME)

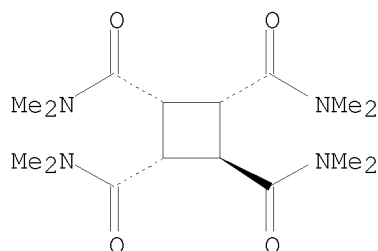
Relative stereochemistry.



RN 905821-43-4 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxamide, N1,N1,N2,N2,N3,N3,N4,N4-octamethyl-,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



L4 ANSWER 139 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:403715 CAPLUS

DOCUMENT NUMBER: 57:3715

ORIGINAL REFERENCE NO.: 57:670i,671a-i

TITLE: The chemistry of photodimers of maleic and fumaric acids derivatives. II. The preparation of cis-trans,cis-and

trans,trans,trans-1,2,3,4-tetrabenzoylcyclobutane; the acid chlorides of 1,2,3,4-tetracarboxycyclobutanes

AUTHOR(S): Griffin, G. W.; Hager, R. B.; Veber, D. F.

CORPORATE SOURCE: Yale Univ.

SOURCE: Journal of the American Chemical Society (1962), 84, 1008-11

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. CA 55, 22159f. The acid chlorides of cis,trans,cis- (I) and trans,trans,trans-1,2,3,4-tetracarboxycyclobutane (II) were prepared and employed as precursors for several sym. 1,2,3,4-tetrasubstituted cyclobutane derivs. Dry I from 22 g. tetra-Me ester (III) of I refluxed 3 h. with 63.2 g. PC15 and evaporated, the residue dissolved in 50 cc. dry C6H6, added dropwise with stirring to 40.4 g. AlCl3 in 300 cc. C6H6, stirred 2.5 h., poured into 500 cc. 10% HCl, stirred 1 h., and filtered, and the residue extracted 36 h. in a Soxhlet apparatus with 200 cc. CHCl3 gave 7.5 g. cis,trans,cis-1,2,3,4-tetrabenzoylcyclobutane (IV), m. 259-61°. I (22.1 g.) and 79.2 g. PC15 refluxed 3 h. and distilled gave 17.5 g. tetraacid chloride (V) of I, m. 76-7° (repptd. from warm CCl4 with hexane). V with MeOH gave III. II (20 g.) and 72.5 g. PC15 refluxed 5 h. gave 21.6 g. tetraacid chloride (VI) of II, b0.2 120-4°, m. 63-5°. VI with MeOH yielded 100% tetra-Me ester of II, m. 126-7°. VI (8.5 g.) in 120 cc. dry C6H6 added during 15 min. to 15.8 g. AlCl3 in 30 cc. C6H6 at 5°, stirred 6 h. with warming to 20°, and worked up, and the crude product extracted 24 h. with C6H6 in a Soxhlet apparatus gave 10

g.

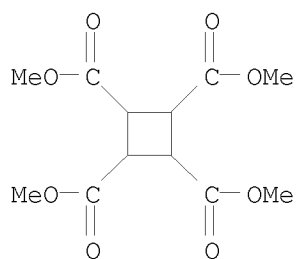
IV trans,trans,trans-isomer (VII), m. 254-6° (PhMe). V (0.5 g.) and 1 g. NaOMe in 60 cc. CHCl<sub>3</sub> refluxed 15 min., diluted with H<sub>2</sub>O, and filtered, and the residue extracted with C<sub>6</sub>H<sub>6</sub> in a Soxhlet apparatus gave 0.20 g.

VII. IV heated 2.5 h. with 10% concentrated HCl in AcOH gave 13% VII. VII (1.0 g.) in 40 cc. dry THF added during 15 min. to PhMgBr from 2.7 g. PhBr and 0.48 g. Mg in 25 cc. dry THF, refluxed 1.5 h., and worked up, and the crude product extracted in a Soxhlet apparatus 0.5 h. with pentane, 0.5 h. with C<sub>6</sub>H<sub>6</sub>, and 12 h. with THF gave from the THF extract 0.25 g. trans,trans,trans-tetrakis(diphenylhydroxymethyl)cyclobutane, m. above 330°. VII (1.0 g.) extracted from a Soxhlet thimble into 0.15 g. LiAlH<sub>4</sub> in THF during 8 h. gave 0.98 g. trans,trans,trans-tetrakis(α-hydroxybenzyl)cyclobutane (VIII), m. 256-8° (50% EtOH). VIII (1.0 g.), 1.0 g. Cu chromite, and 100 cc. EtOH hydrogenated 8 h. at 250°/2000 lb. initial pressure yielded 0.5 g. trans,trans,trans-tetrabenzylcyclobutane (IX), m. 123-4°, also obtained in the same manner directly from VII. IV (0.67 g.) and 15 cc. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O heated 15 h. on the steam bath and filtered and the residue sublimed at 200°/0.15 mm. gave 0.15 g. 3,6-diphenylpyridazine, m. 221-2.5° (Me<sub>2</sub>CO). CF<sub>3</sub>CO<sub>3</sub>H from 3.8 cc. (CF<sub>3</sub>CO)<sub>2</sub>O and 0.040 cc. 90% H<sub>2</sub>O<sub>2</sub> in 6 cc. CH<sub>2</sub>Cl<sub>2</sub> added during 15 min. with stirring to 3.6 g. NaH<sub>2</sub>PO<sub>4</sub> and 1.0 g. VII in 60 cc. CH<sub>2</sub>Cl<sub>2</sub>, refluxed 20 h., and poured into 300 cc. H<sub>2</sub>O, the organic layer worked up, the residue digested with C<sub>6</sub>H<sub>6</sub> left 0.16 g. unchanged VII; the extract yielded 0.095 g. trans,trans,trans-tetracarboxycyclobutane, m. 189-93° (C<sub>6</sub>H<sub>6</sub>). VI (30 g.) in 100 cc. Et<sub>2</sub>O added dropwise during 15 min. with stirring and cooling to 1.2 mol CH<sub>2</sub>N<sub>2</sub> in 2 l. Et<sub>2</sub>O, stirred 1 h. at room temperature, and concentrated gave 30.2 g. diazo ketone; a 30.0-g. sample in 1 l. MeOH stirred 4 h. at 61° with 3.5 g. Ag<sub>2</sub>O and worked up, the crude product digested with 150 cc. boiling Et<sub>2</sub>O, and the extract distilled yielded 9.8 g. tetra-Me ester (X) of trans,trans,trans-1,2,3,4-cyclobutanetetraacetic acid (XI), m. 59-61° (CCl<sub>4</sub>). X heated 0.5 h. at 60° in 20% H<sub>2</sub>SO<sub>4</sub> and cooled gave 92% XI, needles, m. 310-12°. IX (1.0 g.) in 50 cc. 90% aqueous AcOH treated 8 h. at room temperature with 1.3 g. O<sub>3</sub>/h., kept 2 days at room temperature in 10 cc. 30% H<sub>2</sub>O<sub>2</sub> in 26 cc. H<sub>2</sub>O, filtered, concentrated to 5 cc., and kept overnight yielded 0.12 g. XI. VI (9.0 g.) in 125 cc. C<sub>6</sub>H<sub>6</sub> treated with 7.6 g. activated NaN<sub>3</sub>, refluxed overnight, filtered hot, treated with 100 cc. concentrated HCl, refluxed 0.5 h. with stirring, and the aqueous layer concentrated to 25 cc. and filtered yielded 3.0 g. trans,trans,trans-1,2,3,4-tetraminocyclobutane-4HCl (XII.4HCl). XII.4HCl (0.050 g.) triturated with NaOH and heated at 100°/0.1 mm. gave an extremely hygroscopic sublimate which benzoylated by the Schotten-Baumann procedure yielded the tetrakis(N-Bz derivative) of XII, m. 308-10° (EtOH). Mg (1.05 g.) in 35 cc. dry THF treated with 3.24 g. iodine, the suspension treated with 50 cc. dry THF and 1.0 g. VII during 24 h. (added by extraction from a Soxhlet thimble) under N, hydrolyzed with 50 cc. H<sub>2</sub>O, kept 1 h., evaporated, acidified with dilute HCl, and extracted with C<sub>6</sub>H<sub>6</sub> gave 0.03 g. (BzCH<sub>2</sub>)<sub>2</sub>, m. 143-4.5° (EtOH).

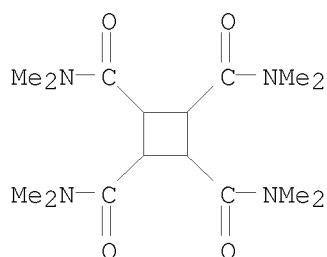
IT 14495-41-1 94253-09-5 96809-80-2  
(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

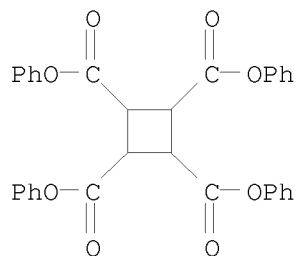
CN 1,2,3,4-Cyclobutanetetra-carboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



RN 94253-09-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxamide, N1,N1,N2,N2,N3,N3,N4,N4-octamethyl-  
 (CA INDEX NAME)



RN 96809-80-2 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetraphenyl ester (CA  
 INDEX NAME)



L4 ANSWER 140 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1962:403714 CAPLUS  
 DOCUMENT NUMBER: 57:3714  
 ORIGINAL REFERENCE NO.: 57:669i,670d-i  
 TITLE: Mercaptoacrylic acid derivatives. IX. The problem of  
 the influence of substituents on the stability of the  
 cyclobutane ring system  
 AUTHOR(S): Gundermann, Karl Dietrich; Huchting, Roswitha  
 CORPORATE SOURCE: Univ. Muenster, Germany  
 SOURCE: Chemische Berichte (1962), 95, 632-8  
 CODEN: CHBEAM; ISSN: 0009-2940  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB cf. CA 56, 11435a. The 1,2-bis(alkylthio)-cyclobutane-1,2-dicarboxylic  
 acids (I), obtainable in good yields by the hydrolysis of their nitriles  
 with strong aqueous alkali, are thermally more stable than the nitriles,  
 probably because of the greater spatial requirements of the CO2H groups.  
 The di-Me ester (II) of 1,2-bis(methylthio)cyclobutane-1,2-dicarboxylic  
 acid (III) is partially converted at 150° to the isomeric

$\alpha,\beta$ -dihydromucic acid derivative  $\text{PhCH:C(CN)SMe}$  (IV) is not converted to a dimer upon prolonged irradiation. Dimeric  $\text{CH}_2\text{:C(CN)SMe}$  (10 g.), 40 g. NaOH, 40 cc.  $\text{H}_2\text{O}$ , and 160 cc. MeOH refluxed 1 week, acidified with cooling with 20% HCl, and evaporated to dryness in vacuo yield 10.7 g. III, m. 140–68°. The crude III recrystd. twice from  $\text{H}_2\text{O}$  gave 25–30% trans-III, m. 169–70°, Rf 0.86 (4:1:5 BuOH-AcOH- $\text{H}_2\text{O}$ ). trans-III (3.25 g.) in 650 cc. hot  $\text{H}_2\text{O}$  treated with 4.45 g. quinine in hot EtOH, filtered rapidly, and cooled gave 2.0 g. quinine salt; a 1.75-g. portion in hot  $\text{H}_2\text{O}$  treated with a slight excess of  $\text{NH}_4\text{OH}$ , cooled, filtered from 0.95 g. quinine, acidified with HCl, and concentrated gave 0.2 g. (+)-trans-III, m. 167°,  $[\alpha]_{\text{D}}^{25} 15.9^\circ$  (c 2.2, EtOH). Crude III (2.4 g.) and 15 cc.  $\text{AcCl}$  refluxed 3 hrs. and fractionated gave 0.7–1.3 g. anhydride (V) of cis-III, b0.2 122–6°, m. 52°. V (0.3 g.) and 3 g. 2N HCl heated on the steam bath to solution and cooled deposited 0.25 g. cis-III, prisms, m. 157–8°, Rf 0.90. III (3.0 g.) neutralized with NaOH, heated 5 hrs. with stirring on the steam bath with 60 g. Raney Ni in about 100 cc.  $\text{H}_2\text{O}$ , filtered, acidified with HCl, and evaporated, and the residue extracted with  $\text{Me}_2\text{CO}$  gave from the extract 1.5

g.

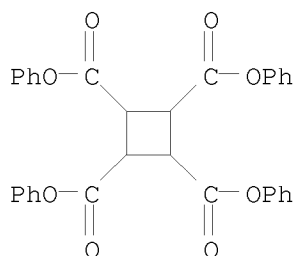
cis-cyclobutane-1,2-dicarboxylic acid (VI) which was converted to the anhydride, m. 77–8°. cis-III with  $\text{CH}_2\text{N}_2$ -Et $_2\text{O}$  in MeOH gave nearly 100% cis-II, m. 67–8° (aqueous MeOH). trans-II, m. 96°, was obtained in the same manner. Crude II from 2.9 g. crude III refluxed 15 hrs. and fractionated yielded 0.8 g.  $\text{MeO}_2\text{CC(SMe):CHCH}_2\text{CH(SMe)CO}_2\text{Me}$ , b0.2 140–7°,  $n_{\text{D}}^{20} 1.5303$ .  $\text{CH}_2\text{:C(CN)SEt}$  kept 10 days at room temperature yielded 89% dimer; a 5-g. portion saponified with aqueous alkali yielded 4.8 g. 1,2-bis-(ethylthio) analog of III, m. 153° ( $\text{H}_2\text{O}$ ). Dimeric  $\text{CH}_2\text{:C(CN)SCH}_2\text{Ph}$  (8.9 g.) gave similarly 8.0 g. 1,2-di(benzyl analog of III, m. 162–3° (aqueous MeOH), which was converted by reductive desulfurization with Raney Ni to VI. Dimeric  $\alpha$ -(cyclohexylthio)acrylonitrile (5 g.) gave 4.1 g. 1,2-bis-(cyclohexylthio) analog of III, m. 134–42° (aqueous AcOH). Dimeric  $\text{CH}_2\text{:C(CN)SCMe}_3$  (2.5 g.) saponified with aqueous alkali yielded 0.7 g. 1,2-(tert-butylthio) analog of III, m. 100–15°. BzH (27.6 g.), 17.4 g.  $\text{MeSCH}_2\text{CN}$ , and 100 cc. 6% aqueous NaOH heated 4 hrs. under N with stirring on the steam bath, neutralized with dilute AcOH, and extracted with Et $_2\text{O}$  gave 12.2 g. IV, b0.1 118–20°,  $n_{\text{D}}^{20} 1.6416$ , and 2.5 g.  $\text{PhCH:C(SMe)CONH}_2$ , m. 113–14° ( $\text{C}_6\text{H}_6$ -petr. ether). IV (5.1 g.) irradiated for 4 months and filtered gave 2.4 g. crystalline IV, m. 64–6° (MeOH).

IT 96809-80-2

(Derived from data in the 7th Collective Formula Index (1962–1966))

RN 96809-80-2 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetraphenyl ester (CA INDEX NAME)



L4 ANSWER 141 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:53033 CAPLUS

DOCUMENT NUMBER: 56:53033

ORIGINAL REFERENCE NO.: 56:9993i,9994a-i,9995a-b

TITLE: Organic sulfur compounds. IV. Some addition and

cooxidation reactions of 4-chlorobenzenethiol with dicyclopentadiene and Aldrin  
AUTHOR(S): Oswald, Alexis A.; Noel, Fernand  
CORPORATE SOURCE: Imp. Oil Ltd., Sarnia, Can.  
SOURCE: Journal of Organic Chemistry (1961), 26, 3948-57  
CODEN: JOCEAH; ISSN: 0022-3263  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB cf. CA 54, 21005e.-4-Chlorobenzenethiol (I) readily added to exo- (II) and endo-dicyclopentadienes (III) and Aldrin (IV) by a radical mechanism to yield the exo (V) and endo isomers of 4-chlorophenylthiodihydro-dicyclopentadiene (VI) and 2-(p-chlorophenylthio)-endo-5,6,7,8,9,9-hexachloro-exo-endo-1,2,3,4,4a,5,8,8a-octahydro-1,4,5,8-dimethanonaphthalene (VII). When I solns. were air oxidized with any of the above diolefins, unstable hydroperoxide intermediates, p-chlorophenylthiohydroperoxydihydro-endo-dicyclopentadiene (VIII), p-chlorophenylthiohydroperoxydihydro-exo-dicyclopentadiene (IX), and exo-2-(p-chlorophenylthio)-3-hydroperoxy-endo-5,6,7,8,9,9-hexachloro-exo-endo-1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene (X) were obtained. The hydroperoxide intermediate of the thiol-IX cooxidn., X, was isolated as a colorless crystalline substance. In solution, it rearranged to the corresponding 2-(p-chlorophenylsulfinyl)-3-hydroxy derivative (XI). It was suggested that similar cooxidn. and not addition reactions of thiols and dicyclopentadiene were responsible for gum formation in some cracked gasolines. I was recrystd., m. 52-3° (heptane). Tech. IV was recrystd. from heptane then MeOH, m. 101-2°. III (13.2 g.) and 14.5 g. I mixed with rise in temperature, the temperature maintained below 70° by cooling, left 4 days at room temperature, and the mixture distilled gave 26.2 g. VI, b2 145-6°. III (13.2 g.) and 14.5 g. I each in 0.3 mole/l. concentration in heptane left 1 week under N, evaporated, and the residue distilled gave 25.5 g. VI. About 0.09 g. tert-butyl hydroperoxide added to the heptane solution described above and left 1 week gave 93% VI. III (13.2 g.) and 29 g. I in heptane left 1 week gave 85% VI. Pure VI had n20D 1.6073. III (56 g.) and 224.5 g. aqueous HI stirred 12 hrs. under N with the temperature maintained below 50°, dissolved in Et2O, washed, and distilled gave 116 g. iododihydro-exo-dicyclopentadiene (XII), b2 80-1°. XII (129.5 g.) and 67.2 g. KOH in 250 ml. 95% aqueous alc. refluxed 4 hrs. under N gave 40 g. II, b8 49-50°, n20D 1.5105. I (14.5 g.) and 13.2 g. II similarly treated gave 96% V, b2 146-7°, n20D 1.6053. VI 13.8 g.) in 40 ml. Ac2O and 15 ml. AcOH treated in 20 min. at about 50° with 11.2 g. 30% H2O2, left 24 hrs. at room temperature, diluted with H2O, concentrated, and the product crystallized gave 8.5 g. 4-chlorophenylsulfonyldihydro-endo-dicyclopentadiene (XIII), m. 113-14.5°. In another experiment, 14.5 g. I and 14.5 g. III gave the adduct and the crude adduct in 200 ml. AcOH oxidized by slowly adding 22.4 g. H2O2 at 40° gave 27.8 g. XIII. Similarly V gave 57% 4-chlorophenylsulfonyldihydro-exo-dicyclopentadiene (XIV), m. 84-5°. In another experiment, the oxidation of 27.7 g. V carried out in 200 ml. AcOH with 22.4 g. H2O2 gave 70% XIV. Heptane solns. of 2.9 g. I and 7.3 g. IV were mixed under N and left 1 week at room temperature away from air to give 7.5 g. VII, m. 106.5-8.5°. A heptane solution (66 ml.) of the reagents prepared as above was irradiated in a quartz flask by an ultraviolet lamp 1 hr. and the product crystallized to give 8.5 g. VII (5.1 g.) in 40 ml. 1:1 AcOH-Ac2O treated at 40° with 0.34 g. H2O2 in an aqueous 30% solution, the mixture kept 2 hrs. at that temperature, left overnight at room temperature, concentrated, and the product crystallized gave two isomeric sulfoxides, m. 206-8.5° and 190-3°, in 36% and 30% yields. VII (5.1 g.) oxidized with 0.68 g. H2O2 as 30% solution gave 4.5 g. exo-2-(p-chlorophenylsulfonyl)-endo-5,6,7,8,9,9-hexachloro-exo-endo-

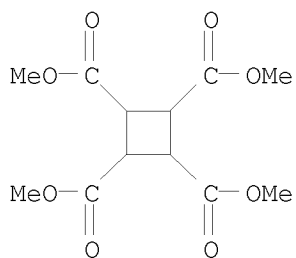
1,2,3,4,4a,5,8,8a-octahydro-1,4:5,8-dimethanonaphthalene, m. 223-6°. I (14.5 g.) in 320 ml. heptane treated with passage of air, 13.2 g. III added, the air introduction continued 2 hrs. at room temperature, and the product crystallized gave two hydroxyethylsulfoxide isomers, m. 218-20° and 182-4°. The heptane filtrate on evaporation left 7 g. oil, which on vacuum distillation afforded 5 g. VI; oxidation gave p-chlorophenylsulfonyldihydro-endo-dicyclopentadiene. O introduced at -5° into a 160 ml. heptane solution of 3.6 g. I and 3.3 g. III, after 1 hr. of oxygenation under ultraviolet light the liquor decanted, and cooled gave VIII, as crystals which became an oil at room temperature, n<sub>20</sub>D 1.5820. From the heptane filtrate I g. crystalline solid was obtained, browned at 140°, m. 175-85°. The above peroxidic products were combined and recrystd. to yield 4.4 g. p-chlorophenylsulfinylhydroxydihydro-endo-dicyclopentadiene isomers described above. A 100 ml. heptane solution containing 4.8 g. I and 4.3 g. II aerated 2 hrs. and left overnight gave 4.1 g. semisolid. This was taken up in Me<sub>2</sub>CO, filtered, and the solid recrystd. to give 1.1 g. p-chlorophenylsulfinylhydroxydihydro-exo-dicyclopentadiene, m. 167-8°. A 160 ml. heptane solution of 3.6 g. I and 3.3 g. II oxygenated at -5° under ultraviolet irradiation gave IX, unstable liquid, n<sub>20</sub>D 1.5850. Into 333 ml. heptane solution containing 7.23 g. I and 18.25 g. IV air was introduced 3 hrs. at room temperature to give 9.7 g. X, m. 248-9° (decomposition). Another crystalline hydroxy sulfoxide isomer (XV) was obtained from the PhMe filtrate, m. 207-10°. Also obtained from the mother liquor was 0.5 g. VII. Into a 162 ml. pentane solution of 3.62 g. I and 9.12 g. IV air was introduced with irradiation with an ultraviolet lamp to give after a total of 0.5 hr. 2 g. XI. On heating XI m. 116-19°, solidified, m. 240-2°. Further introduction of air into the filtered mixture resulted in precipitation of a XI, X, and XV mixture A

CCl<sub>4</sub> solution (15 ml.) of 0.27 g. XI left at room temperature gave 0.18 g. X.

IT 14495-41-1  
(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 142 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1962:53032 CAPLUS

DOCUMENT NUMBER: 56:53032

ORIGINAL REFERENCE NO.: 56:9993i

TITLE: Structure of Nenitzescu's dimer of benzocyclobutadiene

AUTHOR(S): Griffin, G. W.; Veber, D. F.

CORPORATE SOURCE: Yale Univ.

SOURCE: Chemistry & Industry (London, United Kingdom) (1961) 1162

CODEN: CHINAG; ISSN: 0009-3068

DOCUMENT TYPE: Journal

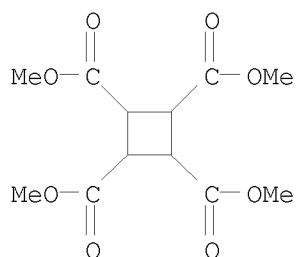
LANGUAGE: Unavailable

AB cf. CA 54, 24612a.-Nenitzescu's hydrocarbon (I),  
dibenzotricyclo[4.2.0.0<sup>2</sup>,5]octa-3,7-diene, was ozonized. The product,  
after esterification with diazomethane, was  
cis-trans-cis-1,2,3,4-tetracarbomethoxycyclobutane, yield 28%, m.  
142-4° (MeOH). The two aromatic nuclei in I were trans.

IT 14495-41-1  
(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA  
INDEX NAME)



L4 ANSWER 143 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1961:137115 CAPLUS

DOCUMENT NUMBER: 55:137115

ORIGINAL REFERENCE NO.: 55:25787b-c

TITLE: Note on the all-cis-cyclobutane-1,2,3,4-  
tetracarboxylic acid

AUTHOR(S): Criegee, Rudolf; Funke, Wolfgang

CORPORATE SOURCE: Tech. Hochschule, Karlsruhe, Germany

SOURCE: Chemische Berichte (1961), 94, 2358-9

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

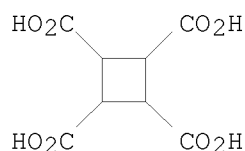
AB Powdered peri-truxillic acid anhydride (1.0 g.) in 130 cc. AcOH treated 18  
hrs. at room temperature with 1.65 g. ozone/hr. and then with 10 cc. 30% H<sub>2</sub>O<sub>2</sub>,  
the mixture kept 24 hrs., heated slowly to 80°, cooled, evaporated in  
vacuo at 35°, the residue dissolved in a min. of hot AcOH, and the  
solution diluted after cooling dropwise with petr. ether yielded 50%  
all-cis-cyclobutane-1,2,3,4-tetracarboxylic acid, platelets, decomposed from  
200°; it gave with CH<sub>2</sub>N<sub>2</sub> in tetrahydrofuran the tetra-Me ester,  
needles, m. 203-4° (after softening at 185°) (EtOAc and  
sublimed at 140°/0.01 mm.). The acid heated 1 hr. with Ac<sub>2</sub>O at  
100° gave the dianhydride, darkened above 235° without  
melting, rhombs from Ac<sub>2</sub>O-dioxane.

IT 53159-92-5

(Derived from data in the 6th Collective Formula Index (1957-1961))

RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



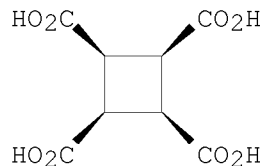
IT 7376-00-3P, 1,2,3,4-Cyclobutanetetracarboxylic acid, all-cis-  
14495-41-1P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetra-Me  
ester



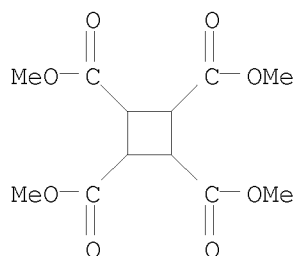
RL: PREP (Preparation)  
(preparation of)

RN 7376-00-3 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\alpha$ ,3 $\alpha$ ,4 $\alpha$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 14495-41-1 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA  
INDEX NAME)



L4 ANSWER 144 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1961:118138 CAPLUS

DOCUMENT NUMBER: 55:118138

ORIGINAL REFERENCE NO.: 55:22159f-i,22160a-c

TITLE: The chemistry of photodimers of maleic and fumaric

acid derivatives. I. Dimethyl fumarate dimer

AUTHOR(S): Griffin, G. W.; Vellturo, A. F.; Furukawa, K.

CORPORATE SOURCE: Yale Univ.

SOURCE: Journal of the American Chemical Society (1961), 83,  
2725-8

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 55:118138

AB The irradiation of di-Me fumarate (I) in the solid state gave cis,trans,cis-1,2,3,4-tetracarboxymethoxycyclobutane (II), whose stereochemistry can be rationalized in terms of direct bond formation between nearest neighbor mols. in the crystal lattice of the monomer. The isomerization of II to the thermodynamically more stable trans,trans,trans-isomer (III) of II was readily achieved thermally. The reduction of III and the hydrolysis of II and III as well as their reactions with PhMgBr were also studied. I (10 g.) in Me<sub>2</sub>CO evaporated under N in a glass cylinder rotating in nearly horizontal position, an ultraviolet lamp inserted into the cylinder, the I irradiated 1-5 days at 25-30°, and the product extracted with C<sub>6</sub>H<sub>6</sub> gave 60% II, m. 144-5°. II transesterified with PhCH<sub>2</sub>OH gave the tetra-PhCH<sub>2</sub> ester, m. 107.5-8.5° (C<sub>6</sub>H<sub>6</sub>-hexane). II (1.0 g.) heated in a Pyrex tube at 0.1 mm. 20 hrs. at 300° gave 50% III, m. 123-5°. II (0.28 g.) refluxed 2 hrs. with 0.3 g. NaOMe in MeOH, diluted with 10 cc. 10% aqueous NH<sub>4</sub>Cl, evaporated, and sublimed at 80°/0.01 mm. gave 18% III, m.

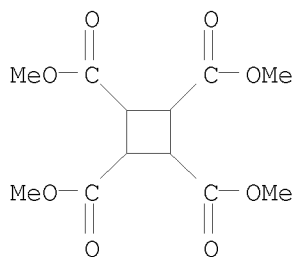
127° (H<sub>2</sub>O). II (5 g.) heated with concentrated HCl to solution on a steam bath, and the resulting acid, which lost H<sub>2</sub>O at 220-5°, treated with CH<sub>2</sub>N<sub>2</sub>-Et<sub>2</sub>O gave II. III (0.28 g.) and 5 cc. concentrated HCl gave the tetra-CO<sub>2</sub>H analog of III, m. 261-4° (decomposition) [AcOH-hexane or tetrahydrofuran (THF)-hexane], which sublimed gave the chair dianhydride (IV). Tetra-CO<sub>2</sub>H analog (V) of II (0.10 g.) heated 3 hrs. with SOCl<sub>2</sub> and evaporated, and the residue washed with hexane and sublimed, gave IV. V heated at 225-30°/0.05 mm. gave also IV. IV was identical with the photodimerization product from maleic anhydride. IV (0.50 g.), 2.50 g. PbO<sub>2</sub>, and 10 g. powdered glass heated 0.25 hr. at 250° with stirring under a stream of N (CO<sub>2</sub> was evolved) gave a residue containing no organic material. II (5.8 g.) in 150 cc. C<sub>6</sub>H<sub>6</sub> and 150 cc. dry Et<sub>2</sub>O reduced with 3.0 g. LiAlH<sub>4</sub> in the inverse manner and then treated dropwise with 25 cc. AcCl in 50 cc. Et<sub>2</sub>O and heated 12 hrs. gave 2.0 g. tetraacetate (VI) of cis,trans,cis-1,2,3,4-tetrakis(hydroxymethyl)cyclobutane (VII), b<sub>0.02</sub> 178-80°. VI (0.90 g.) and 2.0 g. KOH in 50 cc. MeOH refluxed 2 hrs. and evaporated, and the residue heated 3 hrs. with excess BzCl gave the tetrabenzoate of VII, m. 104-5°. V (1.0 g.) in 200 cc. boiling THF treated dropwise with 0.1 mole PhMgBr in 50 cc. dry THF gave 0.5 g. crystalline solid, m. 285-7° (decomposition) (C<sub>6</sub>H<sub>6</sub>); the infrared spectrum showed bands for a OH and a CO function. IV treated in 250 cc. THF dropwise with stirring with PhMgBr from 16 g. Mg, 72 cc. PhBr, and 75 cc. THF, the mixture refluxed 2 hrs., stirred 12 hrs. at room temperature, and worked up gave trans,trans,trans-1,2,3,4-tetrakis(α-hydroxybenzhydryl)cyclobutane (VIII), m. above 300° (absolute EtOH). VIII (0.50 g.), 1.0 g. CuO-Cu-Ba-chromite catalyst, and 100 cc. EtOH hydrogenolyzed 8 hrs. at 250° and 1900 lb. initial H pressure yielded 0.25 g. trans,trans,trans-1,2,3,4-tetrabenzhydrylcyclobutane, m. 284-7° (methylcyclohexane).

IT 14495-41-1 103268-55-9

(Derived from data in the 6th Collective Formula Index (1957-1961))

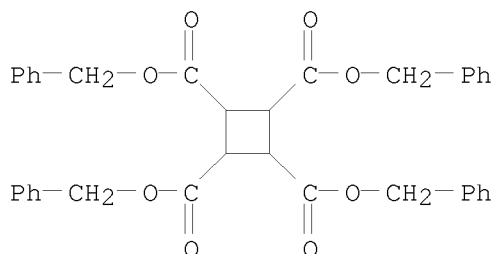
RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)

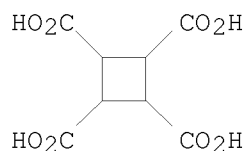


RN 103268-55-9 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetrakis(phenylmethyl) ester (CA INDEX NAME)

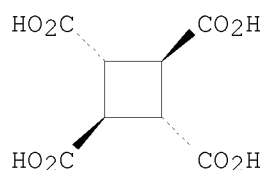


IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
(esters)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)

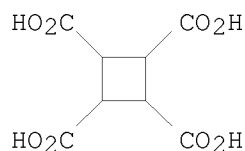


IT 720-21-8P, 1,2,3,4-Cyclobutanetetracarboxylic acid,  
trans,trans,trans- 53159-92-5P,  
1,2,3,4-Cyclobutanetetracarboxylic acid, cis,trans,cis-  
RL: PREP (Preparation)  
(preparation of)  
RN 720-21-8 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid,  
(1 $\alpha$ ,2 $\beta$ ,3 $\alpha$ ,4 $\beta$ )- (CA INDEX NAME)

Relative stereochemistry.



RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 145 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1961:118137 CAPLUS  
DOCUMENT NUMBER: 55:118137  
ORIGINAL REFERENCE NO.: 55:22158e-i,22159a-f  
TITLE: Dimethylketene dimer. I. Catalytic hydrogenation and  
ring cleavage by alcohols  
AUTHOR(S): Hasek, Robert H.; Elam, Edward U.; Martin, James C.;  
Nations, Ronald G.  
CORPORATE SOURCE: Tennessee Eastman Co., Kingsport  
SOURCE: Journal of Organic Chemistry (1961), 26, 700-4  
CODEN: JOCEAH; ISSN: 0022-3263  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 55:118137  
GI For diagram(s), see printed CA Issue.  
AB Optimal conditions for hydrogenation of dimethylketene dimer (I) to the  
corresponding glycol (II) were sought and excellent yields obtained with a  
Ru-C catalyst. I (400 g.) in 600 ml. MeOH hydrogenated at  
125°/1000-1500 lb./sq. in. 1 hr. with 20 g. 5% Ru-C with rocking in

a stainless steel autoclave and the filtered solution evaporated yielded 98%

II,

2,2,4,4-tetramethyl-1,3-cyclobutanediol, m. 129-50°. I (285 g.) in 400 ml. MeOH hydrogenated 18 hrs. at 150°/100 atmospheric with 20 g. Raney Ni, the filtered solution hydrogenated 5 hrs. with 50 g. Raney Ni under the same conditions, the filtered solution evaporated, the residue distilled in

vacuo,

the product (91 g., b2 50-80°) combined with material (140 g., b3 62-72°) from a similar run, and the mixture fractionated through an 8 ft. spinning band column (10:1 reflux ratio) gave 26 ml. Me2CHCOCMe2CO2R (III, R = Me) (IV), b3.1-3.4 51.0-1.8°, contaminated with a small amount of Me2CHCOCMe2CH2OH (V), and 25 ml. V, b3.5-3.6 62.6°, n20 D 1.4382,  $\lambda$  2.9, 5.9, 7.3-7.4  $\mu$ ; p-O2NC6H4CO derivative m.

83-4°. I (28 g.) in 300 ml. MeOH hydrogenated with 0.2 mole H with stirring at 40°/3 atmospheric with 4 g. Raney Ni in EtOH, the filtered solution evaporated, and the residue recrystd. from C6H6 yielded 70% 3-hydroxy-2,2,4,4-tetramethylcyclobutanone, m. 114°; 2,4-dinitrophenylhydrazone m. 154.5-6.0° (corrected). I (100 g.) and 100 g. MeOH autoclaved (N atmospheric) 12 hrs. at 160° and the filtered solution distilled yielded 32% IV, converted by N2H4 to 4,4-dimethyl-3-isopropyl-2-pyrazolin-5-one, m. 81.5-2.5° (corrected). Na (0.1 g.) in 100 ml. absolute alc. at 10° treated portionwise (external cooling) below 50° with 50 g. I, the mixture acidified with 2 ml. AcOH, and distilled yielded 87% III (R = Et). Me3COH (250 ml.)

containing

4 g. 50% dispersion of NaH in mineral oil stirred with 140 g. I, the mixture heated slowly to 60° to initiate an exothermic reaction, the self-refluxing solution stirred 1 hr., acidified with 10 ml. AcOH, and

distilled

yielded 73% III (R = Me3C). I (70 g.), 15 g. HOCH2CH2OH, and 15 ml. C5H5N autoclaved 12 hrs. at 200° and the homogeneous product distilled gave 20 g. forerun and 77% III (R = CH2CH2) (bis compound). I (100 g.), 50 g. II, and 0.5 g. Na heated to 100°, the slurry treated with 2 ml. absolute alc. with immediate rise of temperature to 140-5°, the temperature maintained 45 min. before cooling, and the product repeatedly recrystd. from Me2CO yielded 57% III (R = HC.CMe2.CH.CMe2) (his compound), m. 113-14°. The base-catalyzed alcoholysis of I was used to prepare a series of esters. Further study showed that phenols and mercaptans were similarly esterified, although at a somewhat slower rate. I (80 g.), 53 g. PhOH, and 0.1 g. Na heated to 90°, 2 ml. absolute alc. added, heating continued to 190-5°, the mixture kept at this temperature 30 min., and the cooled mixture distilled yielded 86% III (R = Ph). I (70 g.) and 101 g. C12H25SH refluxed 3 hrs. with stirring with 0.5 g. Na in 300 ml. xylene, the low-boiling components removed at 215°/3 mm., and the residue distilled in a cyclic falling film mol. still at 78-88°/0.02 mm. gave 72% Me2CHCOCMe2COSR (VI, R = C12H25). Data for III and VI were tabulated [R, % yield, b.p./mm. or m.p. (solvent), and n20D given]. III: Me, 32, 88-91°/22, 1.4244; Et, 87, 81.5-82°/9.5, 1.4230; Me2CH, 54, 113-16°/36, 1.4209; H2C:CHCH2, 73, 95-6°/10, 1.4369; Bu, 18, 113-14°/14, 1.4288; Me3C, 73, 100-4°/16, 1.4212; Ph, 86, 95-6°/0.5, 1.4859; CH2CH2 (diester), 77, 185-7°/5.5, 1.4484; HOCH2CMe2CH2, 56, 130-9°/2.5-3.5, 1.4488; CH2CMe2CH2 (diester), 5, 184°/3.5, 1.4488; S(CH2CH2)2 (diester), 93.5, 110°/0.004, 1.4720; MeCH2C(CH2)3 (triester), 52, 140°/0.001, 1.4587; C(CH2)4 (tetraester), 57, 91-2° (Me2CO-C6H14; p-C6H4 (diester), 11, 106-7° (alc.), VI: C12H25, 72, 78-88°/0.02, 1.4705; (CH2)6 (diester), 76, 108-33°/1.0, 1.4951; p-Me3CC6H4, 60, 58-9° (alc.). II (321 g.) and 276 g. HCO2H refluxed 5 hrs. in 200 ml. C6H6, the cooled solution refluxed 4 hrs. with 276 g. HCO2H, the cooled solution diluted with C6H6, the washed and dried solution evaporated, and the residue distilled through a 48 in. packed column yielded

315

g. 98%-pure 2,2,4,4-tetramethyl-1,3-cyclobutanediol diformate (VII), b53

132-3°. VII (315 g.) stored at 20° and filtered gave 167 g. solid, m. 58-65°, recrystd. from petr. ether to give 144 g. trans-II diformate (VIII), m. 67-8°. VIII (132 g.) in 900 ml. MeOH containing 2 g. Na kept 24 hrs. at 20°, treated with 9 ml. AcOH, evaporated on a steam bath, the residue taken up in 900 ml. boiling PhMe, the filtered solution concentrated to 450 ml., and the cooled mixture filtered gave 78 g.

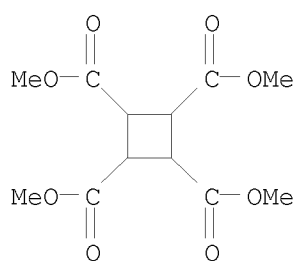
oven-dried (108°) trans-II, m. 148°. The filtrate from VIII converted to the free glycol by methanolysis, the mixture of glycol isomers crystallized from PhMe to give 79 g. material, m. 130-54°, a sample (57 g.) refluxed in 400 ml. PhMe, the solution cooled to 80°, the supernatant liquid decanted, the crystalline residue taken up in 400 ml. boiling PhMe, cooled to 100°, the supernatant decanted, and the crystalline product (24 g., m. 160-3°) recrystd. from 350 ml. PhMe yielded 22 g. pure cis-II, m. 162.5-3.5°. The configuration of the glyxol isomers was assigned on the basis of nuclear magnetic resonance spectra since cis-II contains 2 types of Me groups, whereas all Me groups in trans-II are equivalent. The dipole moments 2.39 and 2.10 D. for the cis and trans isomers were consistent with the previously described structural assignments.

IT 14495-41-1 103268-55-9

(Derived from data in the 6th Collective Formula Index (1957-1961))

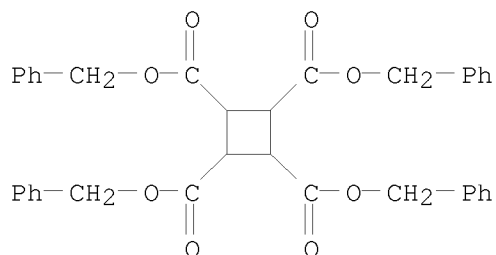
RN 14495-41-1 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



RN 103268-55-9 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetrakis(phenylmethyl) ester (CA INDEX NAME)



L4 ANSWER 146 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1961:59429 CAPLUS

DOCUMENT NUMBER: 55:59429

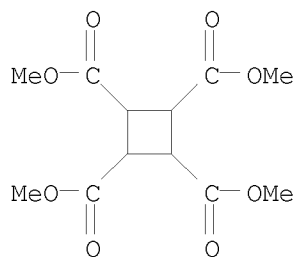
ORIGINAL REFERENCE NO.: 55:11380b-d

TITLE: cis,cis,cis-1,2,3,4-Tetracarbomethoxycyclobutane;  
structure of  $\beta$ -heptacyclene

AUTHOR(S): Griffin, Gary W.; Veber, Daniel F.

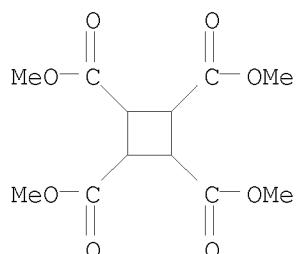
CORPORATE SOURCE: Yale Univ.

SOURCE: Journal of the American Chemical Society (1960), 82, 6417  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 GI For diagram(s), see printed CA Issue.  
 AB cf. CA 54, 13019d.  $\beta$ -Heptacyclene I (cis, Ia) in 90% aqueous HOAc ozonized 17 hrs. at 25° with 3.66 g. O<sub>3</sub>/hr., the reaction mixture kept 3 days with 30% H<sub>2</sub>O<sub>2</sub> at room temperature, the solvents evaporated, the residue esterified with CH<sub>2</sub>N<sub>2</sub> and recrystd. from xylene gave a 5.6% yield of cis,cis,cis-1,2,3,4-tetracarbomethoxycyclobutane (II), m. 203-5°,  $\lambda$  3.34, 3.38, 5.72, 6.95, 8.34, 8.47, 9.31, 10.45, 12.00, 12.84  $\mu$ . Similarly  $\alpha$ -heptacyclene I (trans, III) gave cis,trans,cis-1,2,3,4-tetracarbomethoxycyclobutane (IV). Both II and IV in a sealed tube 20 hrs. at 300° could be isomerized to the all-trans tetraester. The infrared spectrum of II was identical to a totally esterified but otherwise uncharacterized minor product obtained from the irradiation of maleic anhydride in cyclohexane by Criegee. II was the last of the 4 possible tetracarbomethoxycyclobutanes to be synthesized.  
 IT 14495-41-1, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester (stereoisomers)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 147 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1961:59428 CAPLUS  
 DOCUMENT NUMBER: 55:59428  
 ORIGINAL REFERENCE NO.: 55:11379h-i,11380a-b  
 TITLE: The pyrolysis of fluorene  
 AUTHOR(S): Lang, Karl Friedrich; Buffleb, Herbert; Kalowy, Joseph  
 CORPORATE SOURCE: Rutgerswerke Akt.-Ges., Castrop-Rauxel, Germany  
 SOURCE: Chemische Berichte (1961), 94, 523-6  
 CODEN: CHBEAM; ISSN: 0009-2940  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 GI For diagram(s), see printed CA Issue.  
 AB The pyrolysis of fluorene (I) yielded 1,2:7,8-dibenzochrysene (II), a new hydrocarbon probably of the structure III, and rubicene (IV). I (4250 g.) pyrolyzed at 700-50° gave 3355 g. pyrolyzate which distilled gave unreacted I and left 645 g. black-brown residue; the residue dissolved in dry xylene and chromatographed on Al<sub>2</sub>O<sub>3</sub> gave 128 g. II, needles, m. 214-15°, 48 g. III, needles, m. 288-9°, and 26 g. IV, red needles, m. 304-5° (xylene); in one run a small amount of a hydrocarbon, pale yellow needles, m. 437-45°, was also obtained; it was green in warm concentrated H<sub>2</sub>SO<sub>4</sub>. The ultraviolet absorption spectra of II,

III, and IV were recorded.  
 IT 14495-41-1, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester  
 (stereoisomers)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



L4 ANSWER 148 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1961:22472 CAPLUS

DOCUMENT NUMBER: 55:22472

ORIGINAL REFERENCE NO.: 55:4382c-i

TITLE: Cyclobutane-1,2,3,4-tetracarboxylic acid

AUTHOR(S): Criegee, Rudolf; Hover, Hermann

CORPORATE SOURCE: Tech. Hochschule, Karlsruhe, Germany

SOURCE: Chemische Berichte (1960), 93, 2521-4

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

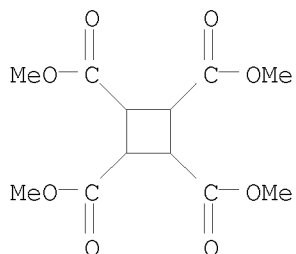
LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 55:22472

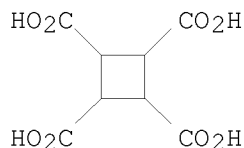
GI For diagram(s), see printed CA Issue.

AB The ozone degradation of truxillic acids (I) yielded 3 of the 4 possible cyclobutane-1,2,3,4-tetracarboxylic acids (II). Powdered PhCH:CHCH:C(CO<sub>2</sub>H)<sub>2</sub> (III) (100 g.) in 2 l. weakly acidic H<sub>2</sub>O stirred and irradiated 48 hrs. with an immersed ultraviolet lamp and filtered gave nearly 100% dimer (IV) of III, m. 195° (glacial AcOH). IV (100 g.) in 650 cc. glacial AcOH and 100 cc. H<sub>2</sub>O treated at -5 to 0° with 28-30 g. ozone (2.2-2.3 g./hr.) and then gradually with 750 cc. 10% H<sub>2</sub>O<sub>2</sub> below 30° and kept 4-5 days gave 40-5 g. α-I, m. 274° (MeOH); in smaller runs the yield could be increased to about 75%. α-I (13.0 g.) in 600 cc. glacial AcOH and 100 cc. H<sub>2</sub>O treated 20 hrs. with 2.8 g. ozone/hr. then gradually with 270 cc. 10% H<sub>2</sub>O<sub>2</sub> and evaporated after 2 days in vacuo below 40° gave 9.2 g. IVa, plates, m. about 240° with previous sintering (decomposition) (dioxane); tetra-Me ester (V), 90%, m. 145° (C<sub>6</sub>H<sub>6</sub>), from IIa with CH<sub>2</sub>N<sub>2</sub> at 0°. IIa (4.0 g.) in 20 cc. Ac<sub>2</sub>O heated 0.5 hr. at 100-20°, cooled, and filtered yielded 2.52 g. dianhydride of IIa, turned brown above 300° without melting. γ-I (4.0 g.), m. 228° (aqueous EtOH), ozonized and treated with H<sub>2</sub>O<sub>2</sub> in the usual manner yielded 80-90% IVb, m. 219° (precipitated from glacial AcOH with Et<sub>2</sub>O), also obtained similarly from epi-I; tetra-Me ester, rodlets, m. 73-4° (petr. ether), b<sub>0.15</sub> 134-7°. ε-I, m. 192°, yielded in the same manner 80-90% Va, m. 260-4° (decomposition) (precipitated from hot glacial AcOH with ligroine); tetra-Me ester m. 127° (C<sub>6</sub>H<sub>6</sub>-petr. ether). V (3.0 g.) reduced at 30-40° with 2 g. LiAlH<sub>4</sub>, the noncryst. product in C<sub>5</sub>H<sub>5</sub>N treated at 0° with excess p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl, kept 24 hrs. at room temperature, and poured into H<sub>2</sub>O yielded 3.0 g. VI (R = OH), melted with decomposition (hot aqueous EtOH). VI (16 g.) and 14 g. NaI refluxed 4 hrs., filtered, evaporated, and the product isolated with CHCl<sub>3</sub> yielded 7.0 g. VI (R = I), m. 140° (EtOAc-MeOH).

IT 14495-41-1P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 (stereoisomers)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)

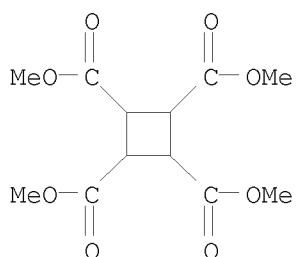


L4 ANSWER 149 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1961:22471 CAPLUS  
 DOCUMENT NUMBER: 55:22471  
 ORIGINAL REFERENCE NO.: 55:4381h-i, 4382a-c  
 TITLE: Cyclopropanes. VII. The absolute configuration of trans-caronic and cis- and trans-umbellularic acids  
 AUTHOR(S): Walborsky, H. M.; Sugita, T.; Ohno, M.; Inouye, Y.  
 CORPORATE SOURCE: Florida State Univ., Tallahassee  
 SOURCE: Journal of the American Chemical Society (1960), 82, 5255-6  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 GI For diagram(s), see printed CA Issue.  
 AB cf. CA 53, 16053a; 54, 15267a. Et diazoacetate (I) (0.042 mol) was added to 0.042 mol (-)-menthyl  $\beta,\beta$ -dimethylacrylate (II) at 130-40° and the mixture distilled to remove unreacted II, which was treated once more with an equivalent amount of I to yield 65% crude adduct. The adduct was saponified to yield 27% caronic acid (III),  $[\alpha]_{20D} -5.05^\circ$  (EtOH). The observed optical rotation corresponded to 15.9% asym. synthesis. To a xylene solution of dimethyldiazomethane was added 31.4 g. (-)-di-menthyl fumarate in xylene at 0-5° to yield 10.0 g. oil, which was heated with 1.0 g. Cu powder at 160-70° until N evolution ceased. The product distilled to yield 56% of adduct ester. Saponification yielded 25% trans-III,  $[\alpha]_{20D} 2.0^\circ$  (EtOH), 6.3% asym. synthesis. I (5.0 g.) was added to 11.3 g. (-)-menthyl  $\alpha$ -isopropylacrylate at 80° and maintained at that temperature until N evolution ceased. The

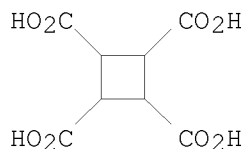


addition product was saponified and the mixture of cis and trans acids separated to give 14.7% cis-umbellularic acid (IV),  $[\alpha]_{16D} -5.4^\circ$  (CHCl<sub>3</sub>), 6% asym. synthesis. The trans-umbellularic acid (V) was isolated in 56.5% yield,  $[\alpha]_{16D} -5.2^\circ$  (acetone), 2.7% asym. synthesis. On the basis of the above asym. syntheses, the following absolute configurations were assigned to IV and V.

IT 14495-41-1P, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 14495-41-1 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
 (stereoisomers)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)

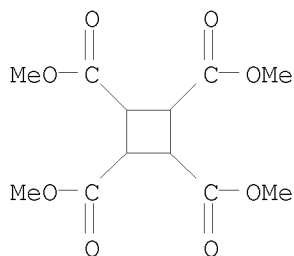


L4 ANSWER 150 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1960:67951 CAPLUS  
 DOCUMENT NUMBER: 54:67951  
 ORIGINAL REFERENCE NO.: 54:13019d-h  
 TITLE: Photodimerization of maleic and fumaric acid derivatives  
 AUTHOR(S): Griffin, G. W.; Basinski, J. E.; Vellturo, A. F.  
 CORPORATE SOURCE: Yale Univ.  
 SOURCE: Tetrahedron Letters (1960), (No. 3), 13-16  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.  
 AB trans-(MeO<sub>2</sub>CCH:)<sub>2</sub> (I), trans-(NCCH:)<sub>2</sub> (II), and (OCCH:)<sub>2</sub>O (III) were irradiated in the solid state with formation of the corresponding cyclobutane derivs. The olefins were deposited in a thin layer on the inner surface of a glass tube by evaporation of a CHCl<sub>3</sub> or Et<sub>2</sub>O solution, the layer irradiated 7-10 days by an internally located Westinghouse 15 T 8 Germicidal Sterilamp (95% ultraviolet radiation in the 253.7 mμ region), and the tube externally cooled with cold H<sub>2</sub>O. Irradiation of 10 g. I gave 2 g. 1,2,3,4-tetracarboxymethoxycyclobutane (IV), m. 144-5°, λ 5.74, 5.80, 7.72, 8.33, 9.79, 10.55, 11.85, 12.21

$\mu$  (KBr), nuclear magnetic resonance spectrum peaks at  $\tau$  6.15, 6.20 (CDC13) in agreement with the structure assigned by Criegee. Treatment of (IV) with NaOMe in MeOH effected stereochem. equilibration and gave the all-trans ester, m. 127°. Irradiation of II 7 days and recrystn. of the Et<sub>2</sub>O-insol. material from MeCN gave 1,2,3,4-tetracyanocyclobutane, m. 237-9° (decomposition),  $\lambda$  4.43, 3.35, 7.98, 8.25, 8.72, 9.72, 9.54, 9.64, 10.47, 12.22  $\mu$ , with the same stereo-chemistry as that of I (as shown by hydrolysis with HCl-AcOH and esterification with CH<sub>2</sub>N<sub>2</sub> to give I). Irradiation of III and sublimation of the product (m. above 200°) at 93°/0.005 mm. to remove III and at 200°/0.005 mm. gave a bisanhydride of 1,2,3,4-cyclobutanetetracarboxylic acid,  $\lambda$  5.40, 5.62  $\mu$ .

IT 14495-41-1, 1,2,3,4-Cyclobutanetetracarboxylic acid, tetramethyl ester  
(stereoisomers)  
RN 14495-41-1 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid, 1,2,3,4-tetramethyl ester (CA INDEX NAME)



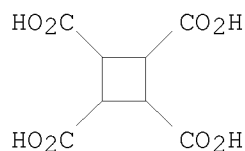
L4 ANSWER 151 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1954:60191 CAPLUS  
DOCUMENT NUMBER: 48:60191  
ORIGINAL REFERENCE NO.: 48:10592e-g  
TITLE: 1,2,3,4-Cyclobutanetetracarboxylic acid. II  
AUTHOR(S): Reid, Evans B.  
CORPORATE SOURCE: Johns Hopkins Univ., Baltimore, MD  
SOURCE: Chemistry & Industry (London, United Kingdom) (1953) 846-7  
CODEN: CHINAG; ISSN: 0009-3068  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The constitutions of the alleged hexa-Et 1,1,2,2,3,4-cyclobutanhexacarboxylate (I) and 1,2,3,4-cyclobutanetetracarboxylic acid (II) (cf. C.A. 46, 2507c) were reinvestigated. I was stable to KMnO<sub>4</sub> in warm AcOH and Br in boiling CCl<sub>4</sub>, but was readily reduced in AcOH in the presence of large amts. of Adams catalyst, absorbing 1 mol H and forming an oil which on hydrolysis gave 1,2,3,4-butanetetracarboxylic acid, m. 187-8° (gas evolved) with solidification, remelting at 235° (anhydro acid). Et 1,1,3,3-tetracarbethoxy-2,4-cyclobutanedimalonate ( $\alpha$ -form) was inert under the same reducing conditions. I is considered to be EtO<sub>2</sub>CCH: C(CO<sub>2</sub>Et)C(CO<sub>2</sub>Et)2CH(CO<sub>2</sub>Et)<sub>2</sub> and on treatment with concentrated HCl gave the alleged II, which was oxidized rapidly by warm aqueous KMnO<sub>4</sub>. Michael condensation between (.tplbond.CCO<sub>2</sub>Et)<sub>2</sub> and (EtO<sub>2</sub>C)2CHCH2CO<sub>2</sub>Et, followed by acid hydrolysis, gave 1-butene-1,2,3,4-tetracarboxylic acid, m. 226° (decomposition), which showed no depression with the alleged II.

IT 53159-92-5P, 1,2,3,4-Cyclobutanetetracarboxylic acid  
RL: PREP (Preparation)  
(preparation of)  
RN 53159-92-5 CAPLUS

CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)



L4 ANSWER 152 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1952:14412 CAPLUS

DOCUMENT NUMBER: 46:14412

ORIGINAL REFERENCE NO.: 46:2507c-i,2508a-c

TITLE: Synthetic approaches to  
1,2,3,4-cyclobutanetetracarboxylic acid

AUTHOR(S): Reid, Evans B.; Sack, Milton

CORPORATE SOURCE: Johns Hopkins Univ., Baltimore, MD

SOURCE: Journal of the American Chemical Society (1951), 73,  
1985-8

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Treatment of  $\text{CH}_2:\text{C}(\text{CHMe}_2)\text{CO}_2\text{Et}$  and Cu-bronze with  $\text{N}_2\text{CHCO}_2\text{Et}$  (Ranganathan, C.A. 30, 8173.8) and hydrolysis of the product (I) gave only fumaric acid, m. and mixed m.p.  $289-90^\circ$  (decomposition); di-Me ester (II), m. and mixed m.p.  $102^\circ$ . The identification of I by Owen and Simonsen (C.A. 26, 4033; 27, 5724) and by Ranganathan as the Et ester of 1,2,3,4-cyclobutanetetracarboxylic acid (III) rested on the analysis of the free acid and the mol. weight of the Me ester as determined by the Rast method. The present authors by this method have obtained 236 and 246 for the mol. weight of II (calculated 144); it is apparent that the method is not reliable for this determination and R. and S. believe neither III nor its esters

have ever been prepared  $(\text{EtO}_2\text{C})_2\text{C}:\text{CHCH}(\text{CO}_2\text{Et})_2$  was made from  $\text{CHNa}(\text{CO}_2\text{Et})_2$  and  $\text{CHCl}_3$ ; self-condensation of the ester (Guthzeit, et al., C.A. 4,906) gave the  $\alpha$ -form of tetra-Et 1,1,3,3-tetracarboxy-2,4-cyclobutanedimalonate, m.  $103^\circ$ ; isomerization to the  $\beta$ -form, m.  $87^\circ$ , was done by keeping the  $\alpha$ -ester in  $\text{C}_6\text{H}_6$  containing piperidine. The  $\alpha$ -ester by extended acid hydrolysis gave a mixture of isomeric 1,3-dicarboxy-2,4-cyclobutanediactic acids (O. and S., C.A. 26, 4033). Fractional crystallization was satisfactory on a small scale. To prepare

the  $\alpha$ -isomer in quantity, the crude mixture of acids was esterified with MeOH saturated with HCl. Distillation of the ester mixture at 1.0-2.0 mm. gave

the Me ester of the  $\alpha$ -acid, a viscous colorless oil, b.  $176-80^\circ$ , m.  $72-4^\circ$ . Hydrolysis by boiling with 3 N HCl gave the  $\alpha$ -acid, m.  $229-31^\circ$  (decomposition). The Me ester of the  $\beta$ -acid could not be distilled because of decomposition. Contrary to Ingold, et al. (C.A. 16, 4187), the dianhydride could not be prepared in yields above 30% from the mixture of isomeric acids, and its hydrolysis gave poor yields of the  $\alpha$ -acid. The dianhydride of the  $\alpha$ -acid (11.2 g.), 27 g.  $\text{AlCl}_3$ , and 150 ml. dry  $\text{C}_6\text{H}_6$  were refluxed till evolution of HCl ceased (8 hrs.), acidified with 250 ml. 2 N HCl (no apparent change in appearance), and the  $\text{C}_6\text{H}_6$  removed by steam-distillation to precipitate crystalline

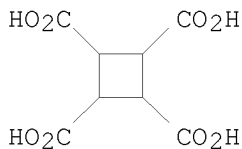
2,4-diphenacyl-1,3-cyclobutanedicarboxylic acid (recrystd. by dissolving in base and precipitating with dilute HCl), m.  $231-2^\circ$ ; di-Me ester, made by treating a suspension of the acid in ether with  $\text{CH}_2\text{N}_2$ , m.  $176^\circ$  (from  $\text{CHCl}_3$ ); di-Et ester, made by concentrating the EtOH solution used to recrystallize the acid, m.  $133-4^\circ$  (from  $\text{CHCl}_3$ ), regenerates the

acid, m. 228-30°, on hydrolysis with aqueous EtOH-NaOH. Repetition of a procedure by Ruhemann and Beddow (J. Chemical Society 77, 1121(1900)) for preparing (.tpltbond.CC02Et)2 (IV) gave mainly di-Et chlorofumarate, as indicated by its Cl content, b.p., and n<sub>D</sub><sup>25</sup> IV, b<sub>12-13</sub> 106-7°, was prepared in 65% yield by an adaptation of the azeotropic distillation method of Mi.acte.covi.acte.c (C.A. 32, 1241.2). Under anhydrous conditions 34 g. IV, 66 g. [CH(CO<sub>2</sub>Et)<sub>2</sub>]<sub>2</sub> (Bischoff and Rach, Ber. 17, 2781(1884)), and 10 ml. absolute EtOH were warmed to 45° to make a clear solution, 1.5 g. Na in 24 ml. EtOH added dropwise (with about 10 drops NaOEt the temperature increased suddenly to 92°, but subsided on further addition), the mixture poured into 100 ml. 3 N HCl, exhaustively extracted with ether, and the ether removed, giving a mixture of solid and oil. The solid hexa-Et 1,1,2,2,3,4-cyclobutanehexacarboxylate on recrystn. (80% EtOH) and further precipitation and solidification gave 48% total yield, m. 78°, did not depress the mixed m.p. of a sample made by Shibata's method (C.A. 5,289), but did depress the m.ps. of [CH(CO<sub>2</sub>Et)<sub>2</sub>]<sub>2</sub> and [:C(CO<sub>2</sub>Et)<sub>2</sub>]<sub>2</sub>. Basic solns. rapidly attacked the ester, forming bubbles on its surface. Refluxing with 10 ml. concentrated HCl/g. ester till the solution was clear and evaporation gave a yellow oil, which in a min. amount of concentrated HCl

slowly precipitated

a white amorphous acidic material attacked immediately by permanganate solution; slow recrystn. from H<sub>2</sub>O gave pure water-white III, m. (2°/min.) 226-8° (decomposition) or (1°/3 min.) 216-17° (decomposition), stable to permanganate solution for 5-6 hrs. During the m.-p. determination an unidentified sublimate, m. 75-85°, formed above the decomposing sample. Infrared detns. were made on dry samples mulled in mineral oil. They show a characteristic band in the 868-888 cm.<sup>-1</sup> region and it is noteworthy that none of the known cyclobutane derivs. studied here shows absorption in the range noted for alkylcyclobutanes. It appears that substitution of 1 or more of the methylene H atoms of each of the cyclobutane C atoms results in a shift of the ring absorption to longer wave lengths. Absorption peaks [compound, cyclobutane (cm.<sup>-1</sup>), C = O]: Et 1,1,3,3-tetracarboxy-2,4-cyclobutanedimalonate (α-form) 870, 1735 ester; (β-form), 875, 1725 ester; 1,3-dicarboxy-2,4-cyclobutanediactic acid (α-form), 888, 1690 acid; Me 1,3-dicarbomethoxy-2,4-cyclobutanediacetate (α-form) 888, 1712 ester; Et 1,1,2,2,3,4-cyclobutanehexacarboxylate, 885, (C = C 1635) 1720 ester; 1,2,3,4-cyclobutanetetra-carboxylic acid, 868, 1690-1710 acid; Me 2,4-diphenacyl-1,3-cyclobutanedicarboxylate, 888, 1675 benzoyl, 1710 ester; Et 2,4-diphenacyl-1,3-cyclobutanedicarboxylate, 875, 1675 benzoyl, 1710 ester.

IT 53159-92-5P, 1,2,3,4-Cyclobutanetetra-carboxylic acid  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 53159-92-5 CAPLUS  
 CN 1,2,3,4-Cyclobutanetetra-carboxylic acid (CA INDEX NAME)



L4 ANSWER 153 OF 153 CAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1932:39055 CAPLUS  
 DOCUMENT NUMBER: 26:39055  
 ORIGINAL REFERENCE NO.: 26:4033f-g  
 TITLE: Synthesis of cis- and  
 trans-dl-1,1-dimethyl-2-γ-ketobutylcyclopropane-  
 3-carboxylic acids

AUTHOR(S): Owen, John; Simonsen, John L.  
SOURCE: Journal of the Chemical Society (1932) 1424-9  
CODEN: JCSOA9; ISSN: 0368-1769  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB Condensation of methylheptenone and N2CHCO2Et with Cu bronze at 45-50° gives a mixture of all-trans- (I) and dl-cis-1,1-dimethyl-2-γ-ketobutylcyclopropane-3-carboxylic acid (II), separated through the semicarbazones; the semicarbazone less soluble in MeOH, decomps. 223-4°, gives I, m. 78-9°; oxime, m. 114°. The more soluble semicarbazone, decomps. 193-4°, gives II, a viscid oil; oxime, m. 102°. Digestion of I or II with 20% H2SO4 for 6 hrs. gives dl-homoterpenyl Me ketone, m. 63-4°. Oxidation of I with NaOBr gives dl-trans-3-carboxy-1,1-dimethylcyclopropane-2-propionic acid (III), m. 131-2°; II gives the cis-isomer (IV), m. 107-8°. Heating III or IV with concentrated HCl at 100° for 5 hrs. gives homoterpenylic acid. A by-product of I and II is cyclobutane-1,2,3,4-tetracarboxylic acid, decomps. 287°; Ag salt; Me ester, m. 103°.  
IT 53159-92-5, 1,2,3,4-Cyclobutanetetracarboxylic acid  
(and derivs.)  
RN 53159-92-5 CAPLUS  
CN 1,2,3,4-Cyclobutanetetracarboxylic acid (CA INDEX NAME)